

Flight, October 1, 1915.

Flight

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

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EDITORIAL COMMENT.

The Allies Move Forward.

After the many months of dogged perseverance in holding the Germans in their lines, the result of the first efforts in the long-promised advance this week by the British and Allied armies in the West has come as a great relief to not only the nation as a whole, but particularly to the tens of thousands of troops who have so uncomplainingly stuck to their task of trench warfare, with full confidence in their leaders that, when the time was ripe, they would get their chance to make things move in earnest. From each and every one of the graphic pen-pictures appearing in the press of the doings at and leading up to the great onslaught which has given such splendid firstfruits, it emerges with almost pointed reiteration that once again one of the outstanding features helping towards the success, indeed rendering the present actions possible, has been the work of the Royal Flying Corps. So little detail is allowed to transpire for publication in regard to what this body has accomplished that it is a great handicap for us to substantiate, by a recital of facts, the high praise which we venture to claim on behalf of the Royal Flying Corps, from the highest in command to the smallest unit of that most invaluable section of our fighting forces. It has been continuous work day by day with reconnaissance,

fighting off the enemy's air pilots and making attacks upon numberless points of vast military importance to the German armies. It is difficult to obtain any coherent story from the fragments of information contained occasionally in the official *communiqués* issued from the British Headquarters in France. It is only from items obtainable from private sources that a due appreciation of the helpful work of the flying officers can be gauged. But that information must necessarily for the present be withheld. A little light now and again is, however, allowed to filter through the dense screen of official censorship, *via* the accredited correspondents who are specially privileged to be in touch with the military staffs out yonder. In this direction an extract from an account in the *Daily Mail* of the great charge, attributed to a "wounded soldier," is very suggestive. He states:—

"The Germans never had a chance of learning quite what was in store for them when the time for the big effort arrived. Their aeroplanes were kept well in check by our airmen, who were in strong force."

This one sentence is highly significant and emphasises the vitally important necessity of a commander taking every step to ensure the supremacy of his flying scouts over those of the enemy. From many sources it has been repeated again and again that this superiority in the air has for a long time been with our side, and from the accounts which have been published over the signatures of the various special correspondents at the front, this fact once more stands out unmistakably. All these narratives evidently have their origin in one single official *résumé* of the epoch-making move which has been commenced, and we therefore select one of these brilliant articles for quotation, so far as it relates to the R.F.C. Thus Mr. G. Valentine Williams in the *Daily Mail* of Wednesday morning:—

"A large measure of credit for our initial success rests with our airmen. The Army is enthusiastic about their work. The daring raids which for the past week they have been executing into the enemy's country undoubtedly prevented the Germans from rushing up their full supply of reinforcements to stem the collapse of their front line. Previous to our offensive on Saturday our airmen had been out on daily observation reconnaissances despite unfavourable weather. Sometimes one of our aeroplanes remained for two hours over the German lines, prevented by clouds from flying at a greater height than 7,000 ft.

"Our offensive was preceded by air attacks on the

German railway communications south of Lille, the routes by which they would naturally bring up their reinforcements from Belgium. On September 23rd a German goods train was wrecked and the rails torn up in several places. On the following day the railway was damaged in three places, while on Saturday, the day on which the offensive was begun, three coaches of a troop train and a goods train were damaged and the track broken in four places.

"On Sunday one of our airmen appeared over the station of Loffre, east of Douai, on the railway from Valenciennes to Douai, and dropped a bomb on a troop train there. Three of the coaches were wrecked. As the airman was flying away he noticed that the Germans had descended from the train and, together with railway officials, had gathered about the wrecked carriages. Thereupon he planed down to 500 ft. and unloading a 110 lb. bomb dropped it right in the middle of the group, after which he clambered aloft and made off again unscathed.

"On the same day the engine and two carriages of another train were derailed at Rosult, near St. Amand, on the railway from Valenciennes to Orchies. Altogether the track was damaged in six places.

"But probably the most important feat of our airmen was the setting on fire of the new railway station at Valenciennes, a railway junction of vital military importance to the Germans, as here the lines from Brussels and Maubeuge meet with the lines going out to Lille, Cambrai, Tournai, and Douai. Twenty-seven air fights represent the achievement of our fighting aeroplanes last week. In the course of these encounters one German aeroplane was definitely known to be wrecked, while in only one instance did the British aeroplane come off second best.

"I am informed that as a consequence of the vigour wherewith the war in the air has been carried into the enemy's country the German flying men will no longer meet ours in combat. Certainly I have seen no German

aeroplane in the vicinity of the front during the present battle, while this afternoon I saw at least half-a-dozen British machines soaring out towards the battlefield against a threatening sky."

Here we have a series of "jobs" carried through against defined objectives, all leading up to the grand assault which has done so much to hearten both our troops and the nation, whilst it has seriously broken the spell of confidence which had taken hold of the German people of the certainty of the final verdict of victory being in their favour. The moral effect of the Allies' victory must be very great and far-reaching. Mr. Philip Gibbs, in his story to the *Daily Telegraph* and *Chronicle*, pays a special tribute, in referring to our aerial service, in the following words:—

" . . . Our aerial service, upon whose vigilant accuracy of report and continual daring the Staff relies for much useful information, enabling it to perfect its preparations for the great struggle which is now in progress."

In another direction, from the Paris correspondent of the *Daily Mail*, a note is forthcoming in connection with the attacks by the French forces in the Argonne against the German Crown Prince's Army. He quotes the statement by a wounded Breton infantryman. "Our commanders had left nothing to chance. Previous to the attack our airmen had carefully examined the ground, and reported that the Germans had dug a deep moat round the village we were about to storm. This timely warning enabled the engineers to construct plank bridges, and when we reached the moat we threw them over, and continued the advance. We took the village and a large number of prisoners."

These measures of praise are but a faint reflection of the changes of moment which aviation has brought into the methods of warfare. As the years go by these changes will be still more pronounced. We look forward to our administrators seeing in the future that, as on the sea, there shall be no scintilla of doubt as to the command of the air being with us.

* * *

THE ROLL OF HONOUR.

THE Secretary of the Admiralty announces the following casualties:—

Under date August 21st (from France):

Wounded.

Lieutenant Frederick Russell, R.M.A., Anti-Aircraft Section.

Under date September 20th:

Killed.

Probationary Flight Sub-Lieutenant Douglas A. Hay, R.N.

Under date September 22nd:

Missing.

Second Lieutenant S. W. Caws, Royal Flying Corps.
Lieutenant W. H. Sugden-Wilson, W. Somerset Yeomanry, attached R.F.C.

Under date September 23rd:

Missing.

Flight Sub-Lieutenant Richard C. Petter, R.N.

Under date September 24th:

Seriously Injured.

Lieutenant Alastair P. Hadow, R.N.R., late Probationary Flight Sub-Lieutenant, R.N.

The following casualties in the Expeditionary Force have been reported from General Headquarters:—

Missing.

Second Lieutenant W. H. Nixon, King's Own (R. Lancaster) and R.F.C.

Captain J. N. S. Stott, 5th Dragoon Guards, attached F.R.C.

Undated:

Previously Officially reported Missing, now Unofficially reported Prisoner of War.

Second Lieutenant W. A. Maclean, Black Watch, attached R.F.C.

Previously Officially reported Missing, now Unofficially reported Killed.

Captain W. C. Adamson, Royal Flying Corps.

Previously Officially reported Missing, now Officially reported Prisoner of War.

Lieutenant P. A. Broder, 5th Worcestershire and R.F.C.

The following casualties have been reported in connection with recent air raids:—

Killed.

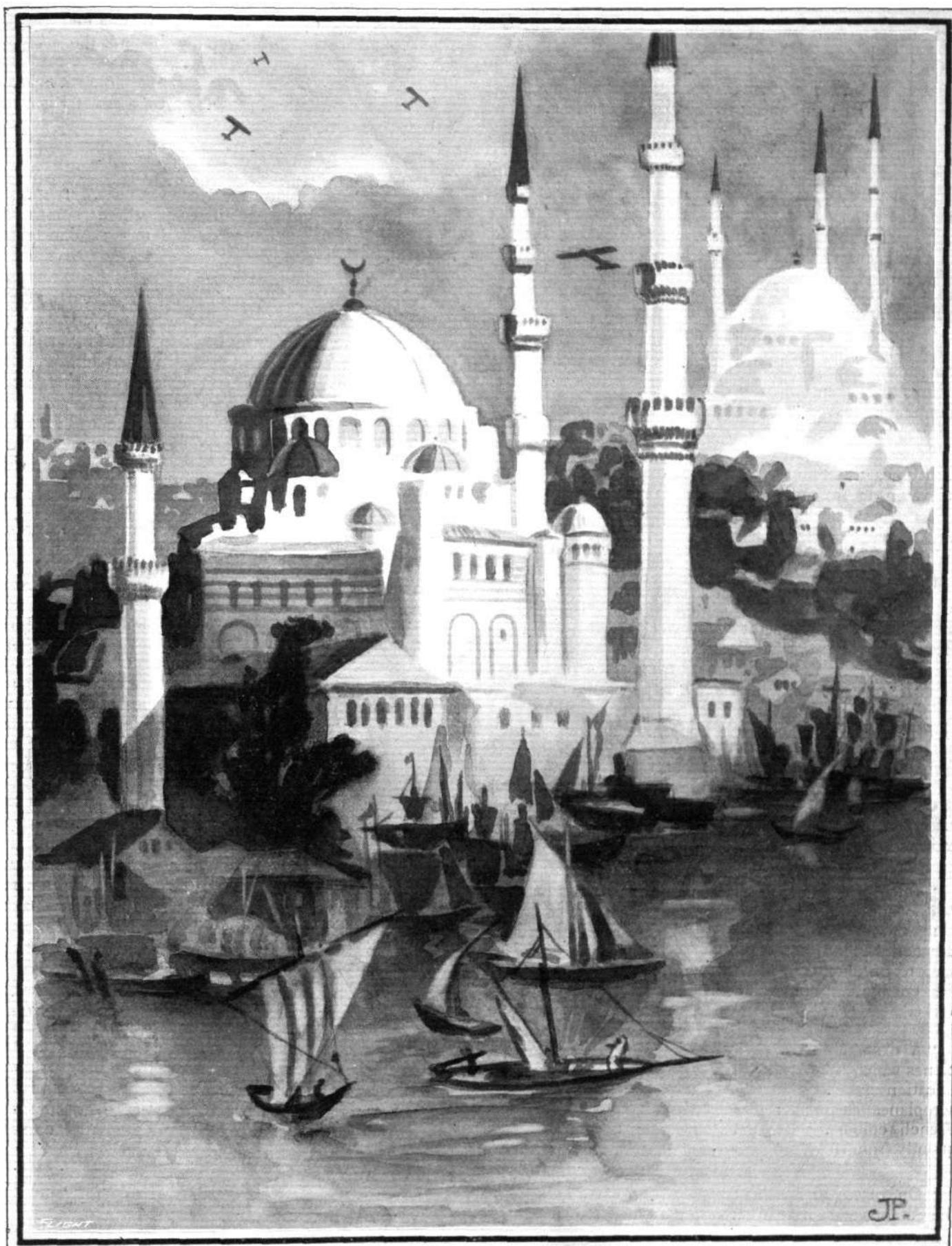
2/1 City of London Yeomanry—Corporal A. E. Pomeroy.

Died of Wounds.

2/1 City of London Yeomanry—L. F. McDonald.

Wounded.

2/1—City of London Yeomanry—H. G. Parkinson.
R.A.M.C., 2nd London Mounted Brigade Field Ambulance, (7.F.)—A. W. Quinton.



IN THE EASTERN WAR ZONE.—Allies' air scouts over the City of Minarets on the Bosphorus.

AIRCRAFT WORK AT THE FRONT.

OFFICIAL INFORMATION.

British.

General Headquarters, Sept. 24th.

"OUR aircraft yesterday carried out a successful raid on the enemy's communications near Valenciennes. A railway train was hit and the line cut in several places."

General Headquarters, Sept. 26th.

"Our aeroplanes to-day bombed and derailed a train near Loffres, east of Douai, and another which was full of troops at Rosult, near St. Armand. Valenciennes Station was also bombarded."

Press Bureau, Sept. 27th.

"The War Office announce that recent operations on the Gallipoli Peninsula have been confined mainly to attacks on either side by aircraft, bombardments by artillery, and some mining."

"More than once enemy aeroplanes have attacked our aircraft base, but the bombs they dropped did no damage. In return our aeroplanes counter-attacked, and with bombs blotted out a hangar, and did some damage among shipping at Burgaz."

General Headquarters, Sept. 28th.

"Our aeroplanes to-day bombed the railway line near Bapaume, wrecking a train. They also damaged the railway near Achiet-le-Grand."

French.

Paris, Sept. 22nd. Afternoon.

"Our aviators bombarded the enemy's cantonments at Middelkerke, and also a train between Bruges and Thorout. A party of eight aviators effectively bombarded the railway station at Conflans, on the line from Verdun to Metz."

Paris, Sept. 22nd. Evening.

"As a reprisal for the bombardment by the Germans of open towns and the civilian populations of France and England, a squadron of aeroplanes this morning left to bombard Stuttgart, the capital of Wurtemberg."

"About thirty shells were dropped on the Royal palace and on the station. Our aeroplanes, which were cannonaded at different points on their long journey, returned uninjured to their base."

Paris, Sept. 23rd. Evening.

"One of our dirigibles last night bombarded several railway stations where enemy movements were reported. Our aviators compelled several enemy captive balloons to descend. French aeroplanes bombarded the railway stations of Offenburg, Conflans, and Vouziers, as well as the enemy cantonments at Langemarck and Middelkerke."

Paris, Sept. 23rd, by Wireless.

"A despatch from Cologne pretends that the aeroplanes which bombarded Stuttgart carried German identification marks. This assertion is absolutely false. The aeroplanes carried prominently the cockade, with the French colours. Besides, they were bombarded frequently from the German lines both going and returning."

Paris, Sept. 25th. Afternoon.

"One of our air flotillas dropped some forty bombs on the Sablons station at Metz yesterday."

Russian.

Petrograd, Sept. 23rd.

"A German aeroplane threw bombs on Schlok

(19 miles west of Riga). It was bombarded by our troops, and came down rapidly behind the German trenches."

Petrograd, Sept. 24th.

"German aviators appeared at the Gulf of Riga, but were driven off by our seaplanes."

Italian.

Rome, Sept. 24th.

"An enemy aeroplane dropped three bombs on Tonnezza, but no one was injured and no damage is reported."

Serbian.

Nish, Sept. 24th.

"A hostile aviator flew over Aliona, and was descending the Danube when our artillery fire obliged him to cross to the Roumanian side. Immediately afterwards the same thing occurred with another enemy aviator. The enemy's artillery from Aliona then opened fire, but our artillery succeeded in reducing the enemy's to silence."

German.

Berlin, Sept. 22nd.

"At 8.15 this morning enemy aviators, with German marks on their aeroplanes, attacked Stuttgart, and dropped several bombs on the town, killing four persons and wounding a number of soldiers and civilians. The material damage was quite unimportant. The aviators were fired at by our anti-aircraft guns and troops, and disappeared in a southerly direction at 8.30."

"Owing to the fact that shortly before, at 7.45 a.m., the military authorities had been informed of the approach of a German pilot the population could not be warned in good time. This German aviator arrived over Stuttgart at 9.30, and was fired upon from below for a short time until he was definitely recognised as a German. He landed unhurt near the town."

Berlin, Sept. 23rd.

"North of Ste. Menehould an enemy aeroplane was brought down by our fire in a burning condition. Another aeroplane was forced to descend after an aerial battle south-east of Vouziers. The occupants were taken prisoners. Above Pont à Mousson a German airman, fighting against two French airmen, shot down one of them. The aeroplane fell in a burning condition between the German and French lines."

Berlin, Sept. 24th.

"In the course of yesterday artillery and aerial activity has increased along the entire front."

"On the coast an English aeroplane was shot down. The pilot was taken prisoner."

Berlin, Sept. 25th.

"Near Friedrichstadt a German aviator shot down a Russian aeroplane."

Berlin, Sept. 26th.

"In air battles our aviators achieved successes. One of our warplanes shot down an aeroplane west of Cambrai. South of Metz Lieutenant Boelke, while on a trial flight, shot down a Voisin aeroplane. Flight-Sergeant Boehm went up to repulse an attack on Freiburg by a squadron of three French warplanes. He shot down two of them; only the third escaped."

THE BRITISH AIR SERVICES.

UNDER this heading are published each week the official announcements of appointments and promotions affecting the Royal Naval Air Service and the Royal Flying Corps (Military Wing) and Central Flying School. These notices are not duplicated. By way of instance, when an appointment to the Royal Naval Air Service is announced by the Admiralty it is published forthwith, but subsequently, when it appears in the LONDON GAZETTE, it is not repeated in this column.

Royal Naval Air Service.

THE following appeared among the Admiralty announcements of the 23rd ult. :—

The undermentioned have been entered as Probationary Flight Sub-Lieutenants, for temporary service, with seniority as follows, and all appointed to "President," additional, for R.N.A.S. : Temporary Lieut. (R.M.) G. R. G. Daglish, temporary Lieut. (R.N.V.R.) F. M. Fox, temporary Sub-Lieut. (R.N.V.R.) E. F. Beaumont, and D. Knowles, all Sept. 22nd; E. E. Deans, O. Champion, and J. J. L. Patterson, all Oct. 2nd.

S. T. Dockray, H. S. Brown, and A. V. Taylor all granted temporary commissions as Lieutenants (R.N.V.R.), with seniority of Sept. 22nd, and appointed to "President," additional, for R.N.A.S.

Probationary Flight Sub-Lieut. (temporary) A. P. Hadow granted a temporary commission as Lieutenant (R.N.R.), with seniority of Sept. 22nd.

The following appeared among the Admiralty announcements of the 27th ult. :—

Temporary Lieut. (R.N.V.R.) H. C. Morris entered as Acting Flight-Lieutenant, for temporary service, and appointed to the "President," additional, for R.N.A.S. To date Sept. 25th.

Temporary Sub-Lieuts. (R.N.V.R.) G. E. Baxter, J. Simson, L. Barr, and S. T. Baker all entered as Probationary Flight Sub-Lieutenants, for temporary service, and appointed to the "President," additional, for R.N.A.S. To date Sept. 25th.

A. J. Long and E. W. Carlton-Williams both entered as Probationary Flight Sub-Lieutenants, for temporary service, and appointed to the "President," additional, for R.N.A.S. To date Oct. 2nd.

The following appeared among the Admiralty announcements of the 28th ult. :—

The following Probationary Flight Sub-Lieutenants have been confirmed in rank, with original seniority, and re-appointed to "President," additional, for R.N.A.S.; to date Sept. 21st: C. Perrett, L. W. Hodges, W. L. Graham, H. G. Henley, L. H. Wilkins, and R. M. Clifford.

The following Probationary Flight Sub-Lieutenants (temporary) have been confirmed in rank, with original seniority, and re-appointed to "President," additional, for R.N.A.S.; to date Sept. 29th: M. J. Golding, C. R. Mackenzie, S. G. Beare, J. D. Hume, C. B. Gasson, G. Smethurst, W. H. Peberdy, A. S. Ince, E. L. Ford, C. F. B. Penley, G. A. Gooderham, C. N. Geale, C. MacLaurin, R. F. E. Wickham, H. G. Brackley, A. D. W. Allen, J. S. Browne, and R. E. Bush.

The following Probationary Flight Sub-Lieutenants (temporary) have been confirmed in rank, with original seniority, and re-appointed to "President," additional, to date Sept. 21st: C. Laurence and B. F. M. Hughes.

Probationary Flight Sub-Lieut. (temporary) W. R. Mackenzie, transferred to Permanent List of R.N.A.S., with seniority of Sept. 23rd.

Temporary Lieut. (R.N.V.R.) F. E. Cooper, promoted to temporary Lieutenant-Commander (R.N.V.R.), with seniority of Sept. 23rd.

The undermentioned Temporary Sub-Lieutenants (R.N.V.R.) have been promoted to Temporary Lieutenants (R.N.V.R.) with seniority as follows: W. D. Smiles, Sept. 23rd; G. M. T. Rees, Sept. 24th; and A. Carroll-Marx, Sept. 25th.

A. B. Ovens, entered as Probationary Flight Sub-Lieutenant, for temporary service, with seniority of Oct. 3rd, and appointed to "President," additional, for R.N.A.S.

D. F. H. FitzMaurice, granted temporary commission as Sub-Lieutenant (R.N.V.R.), with seniority of Sept. 27th, and appointed to "President," additional, for R.N.A.S.

Royal Flying Corps (Military Wing).

THE following appeared in a supplement to the London Gazette issued on the 22nd ult. :—

*^{Brigade Majors.}—Lieut. (temporary Capt.) Napier J. Gill, R.A., from a Wing Adjutant, Royal Flying Corps, Military Wing; Sept. 7th, 1915. Major Roper M. Tyler, Durham L.I., vice Major E. B. Mathew-Lannow, Queen's (Royal West Surrey Regt.); Sept. 15th, 1915.

Staff Captain.—Lieut. Evelyn P. Graves, R.A., from a Flying Officer, Royal Flying Corps, Military Wing. Sept. 7th, 1915.

Flying Officers.—Sept. 2nd, 1915: Lieut. P. Le G. Gribble, Hampshire (Carabiniers) Yeomanry, T.F.; Lieut. G. D. J. Grune, R.F.A., T.F.; temporary Second Lieut. O. Hughes, Worcestershire Regt., and to be transferred to the General List; temporary Second Lieut. J. Sowrey, Queen's (Royal West Surrey Regt.), and to be transferred to the General List; temporary Second Lieut. E. R. N. Hyde, Bedfordshire Regt., and to be transferred to the General List; temporary Second Lieut. G. L. Pitt, York and Lancaster Regt., and to be transferred to the General List. The appointment of Lieut. Selwood H. Hewitt, Staff, South African Permanent Force, as an Assistant Equipment Officer and to be temporary Lieutenant, notified in the *Gazette* of September 6th, 1915, is cancelled.

The following appeared in a supplement to the *London Gazette* issued on the 23rd ult. :—

Wing-Commander.—Brevet Lieut.-Col. William S. Brancker, R.A. Aug. 25th, 1915.

Supplementary to Regular Corps.—Second Lieutenants (on probation) confirmed in their rank: Valentine M. Grantham and William T. L. Allcock.

To be Second Lieutenants (on probation): Sept. 5th, 1915: Wilfred H. Furlonger and George S. Sansom.

The following appeared in the *London Gazette* of the 24th ult. :—

Flying Officers.—Sept. 7th: Second Lieut. R. I. Kirton, K.O.S.B., and seconded; Second Lieut. W. T. L. Allcock, S.R.; Second Lieut. V. M. Grantham, S.R.; Second Lieut. J. M. J. Kenny, A.S.C. Sept. 9th.

The following appeared in a supplement to the *London Gazette* issued on the 25th ult. :—

Supplementary to Regular Corps.—To be Second Lieutenants (on probation): A. W. Briggs; Aug. 30th. R. A. Logan; Sept. 1st. G. D. Etches; Sept. 13th.

The following appeared in a supplement to the *London Gazette* issued on the 27th ult. :—

N. Cycl. Batt.—Second Lieut. D. Hodgson seconded for duty with Royal Flying Corps. Sept. 15th.

The following appeared in the *London Gazette* of the 28th ult. :—

Squadron-Commanders, and to be temporary Majors whilst so employed.—Sept. 5th, 1915: Capt. G. B. Stopford, R.A.; Capt. F. A. Wanklyn, R.A., from a Flight-Commander; Lieut. (temporary Capt.) E. N. Fuller, Special Reserve, from a Flight-Commander; Lieut. (temporary Capt.) R. P. Mills, Royal Fusiliers (City of London Regt.), from an Instructor, Central Flying School; Capt. G. B. Hynes, R.A., from an Equipment Officer; Sept. 12th, 1915.

Flying Officers to be Flight Commanders.—Second Lieut. (temporary Capt.) R. A. Cooper, Hampshire (Carabiniers) Yeomanry, T.F.; Aug. 30th, 1915. Sept. 5th, 1915: Capt. G. H. Cox, Prince of Wales's (North Staffordshire Regt.); Capt. B. F. Moore, Royal Warwickshire Regt. And to be temporary Captains whilst so employed: Lieut. W. B. Hargrave, Suffolk Regt.; Lieut. E. L. Gossage, R.A.; Lieut. E. O. Grenfell, R.A.; Second Lieut. L. A. Tilney, Duke of Lancaster's Own Yeomanry, T.F.; Second Lieut. L. Parker, 15th (King's) Hussars.

Flying Officer.—Second Lieut. J. Latta, Special Reserve, Sept. 10th, 1915.

Wing-Adjutant.—Capt. Lord R. E. Innes-Ker, Irish Guards, Special Reserve. Sept. 13th, 1915.

Balloon Officers.—Sept. 16th, 1915: Second Lieut. E. B. Broughton, Special Reserve; Second Lieut. L. E. Brown-Greaves, Special Reserve.

Supplementary to Regular Corps.—Second Lieutenants (on probation) confirmed in their rank: Eric B. Broughton, Lewis E. Brown-Greaves, John Latta, John C. Slessor, Cecil H. Morgan, and Joseph A. Crook. To be Second Lieutenants (on probation): Basil H. Radford; Sept. 14th, 1915. Alan Goodfellow; Sept. 24th, 1913.

Central Flying School.

Instructors.—Sept. 5th, 1915: Capt. J. L. Jackson, Connaught Rangers, a Flight-Commander, vice Lieut. (temporary Capt.) E. L. Conran, 21st (Empress of India's) Lancers. Lieut. (temporary Capt.) J. E. Tennant, Scots Guards, a Flight Commander, vice Lieut. (temporary Capt.) R. P. Mills, Royal Fusiliers (City of London Regt.).

Officer in Charge of Experimental Flight (graded as Squadron Commander).—Lieut. (temporary Capt.) E. L. Conran, 21st (Empress of India's) Lancers, a Flight-Commander, vice Capt. G. B. Stopford, R.A. Sept. 5th, 1915.

CONSTRUCTIONAL DETAILS.—IV.

WHILE our page of comparative sketches in last week's issue illustrated, with one exception, English methods of forming a joint between the *longerons*, struts, and cross members of the *fuselage* of an aeroplane, the sketches included in our set this week are of a more international character, in so far as they show some of the ways employed by German, French, and Austrian constructors for obtaining the same result. The L.V.G. and the Aviatik clips are of particular interest in being representative of

two of Germany's best-known firms, while the fitting employed by the Lohner firm of Vienna may be taken as representing current practice among Austrian constructors. In both cases, it will be seen, piercing of the *longerons* has been either entirely avoided or confined to the small opening made by a wood screw. The L.V.G. fitting has the advantage, among others, that it is adaptable to any size of *longeron*, within reason, of course, as it does not surround this member.



Lights in Private Houses.

REPLYING to questions put by Sir C. Kinloch-Cooke, in the House of Commons on the 28th ult., Sir J. Simon, the Home Secretary, said the matter of lights in private houses had been receiving the attention of the police, and he was now making the following order, which would strengthen their hands:

"Bright lights in hotels, flats, dwelling-houses and premises of all descriptions not coming under the other provisions of this order must be shaded or windows screened, so that no bright light is cast in any direction outside."

This will apply to bright lights visible from the rear of houses no less than to those visible from the front.

On the same subject on the 23rd inst. Sir J. Simon said the regulation of lighting in the Metropolitan area, with a view to minimising risk from air raids, has been most carefully studied by the expert officers of the Admiralty, and the scheme adopted by the Home Office and the police authorities is based on their advice and



is the result of repeated observations alike from the air and from the ground. The main object to be aimed at is uniformity rather than absolute darkness, and it is a matter of great importance that the scheme should be applied equally in all parts of this area, exceptional darkness being as likely to prove a distinctive mark as exceptional brightness. Private citizens and local authorities have shown themselves generally willing to accept the application of the scheme, and the lighting orders made to give effect to it.

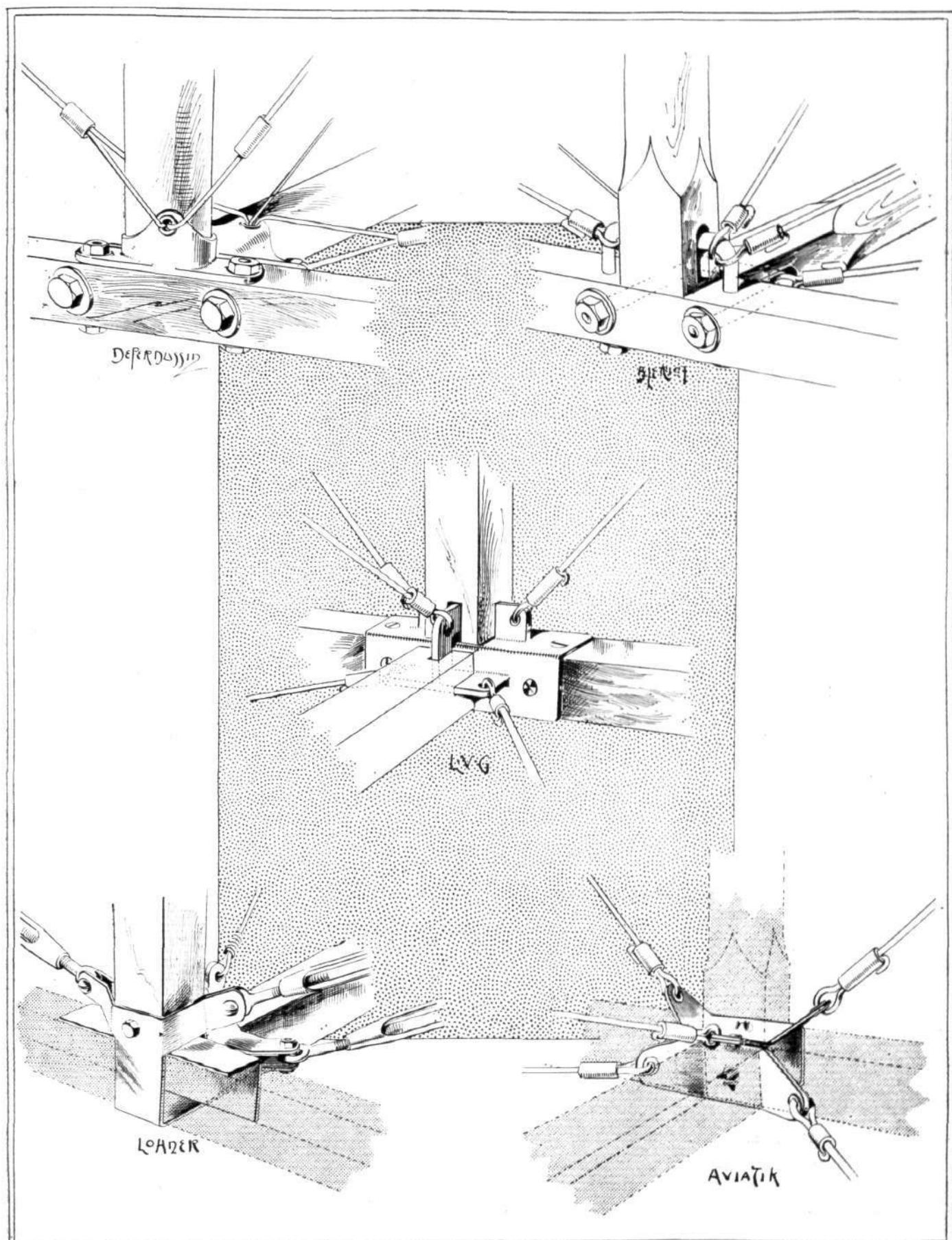
Air Raid Victims in Paris.

THROUGH the publication by the French Ministry of Foreign Affairs of the book entitled: "Germany's Violations of the Laws of War," the official list of people killed and wounded by bombs dropped during the German air raids on Paris between August 30th and October 12th, 1914, is disclosed. According to these official figures, four women and seven men were killed, and nineteen women and thirteen men injured. The list only comprises the names of civilians.



FROM ALL PARTS OF THE BRITISH EMPIRE.—A group of pupils of the London and Provincial Aviation School at Hendon Aerodrome. From left to right, top row: Mr. C. de M. Franklin (S. Africa), Mr. W. Rodgers (Canada), Brig.-Gen. L. M. Hall, C.B. (England), Mr. J. G. Woodley (Ireland), Mr. N. P. Roe (India). Bottom row: Mr. T. Grimwade (S. Australia), Mr. G. Knowles (New Zealand), Mr. C. Jamieson (Victoria, Australia), Mr. F. E. Sargood (N.S.W., Australia).

CONSTRUCTIONAL DETAILS.—IV.



Various methods of connecting the struts, cross-members, and longerons of the fuselage.



The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

Aviators' Certificates.

THE following Aviators' Certificates have been granted:—

1759 2nd Lieut. Frederick Despard Pemberton (Maurice Farman Biplane, Military School, Norwich). Sept. 9th, 1915.

1760 2nd Lieut. George Hornby Birley (Royal West Surrey Regt.) (Maurice Farman Biplane, Military School, Shoreham). Sept. 15th, 1915.

1761 2nd Lieut. Alexander Lindsay Macdonald (Maurice Farman Biplane, Military School, Farnborough). Sept. 17th, 1915.

1762 Lieut. Edward Radclyffe Pretyman (1st Somerset Light Infantry) (Maurice Farman Biplane, Central Flying School, Upavon). Sept. 18th, 1915.

1763 John Valentine Steel (Maurice Farman Biplane, British Flying School, Le Crotoy, France). Sept. 18th, 1915.

1764 Frederick Norton Grimwade (L and P. Biplane, London and Provincial School, Hendon). Sept. 20th, 1915.

1765 Flight Sub-Lieut. Eric Ludwig Pralle, R.N.A.S. (Maurice Farman Biplane, Royal Naval Air Station, Chingford). Sept. 22nd, 1915.

1766 2nd Lieut. Arthur Francis Brooke (10th Hussars) (Maurice Farman Biplane, Military School, Farnborough). Sept. 7th, 1915.

1767 Thomas Meade Bertram Newton (Maurice Farman Biplane, Military School, Farnborough). Sept. 9th, 1915.

1768 Capt. Harry Francis Adam Gordon (York and Lancaster Regt.) (Maurice Farman Biplane, Military School, Montrose). Sept. 12th, 1915.

1769 2nd Lieut. Gordon Osmond (6th Oxfordshire and Bucks Light Infantry) (Maurice Farman Biplane, Military School, Shoreham). Sept. 17th, 1915.

1770 Lieut. Joseph Prestwich, A.S.C. (T.F.) (Maurice Farman Biplane, Military School, Farnborough). Sept. 21st, 1915.

1771 Lieut. Archibald Paul Dickie (5th The Black Watch) (Maurice Farman Biplane, Military School, Montrose). Sept. 21st, 1915.

1772 Lieut. Geoffrey Asteley Burney (1/3rd Scottish Horse) (Maurice Farman Biplane, Military School, Montrose). Sept. 21st, 1915.

1773 Capt. Frederick George Alleyne Arkwright (11th Hussars) (Maurice Farman Biplane, Military School, Montrose). Sept. 21st, 1915.

1774 2nd Lieut. Lord Doune (1/2nd Scottish Horse) (Maurice Farman Biplane, Military School, Montrose). Sept. 21st, 1915.

1775 2nd Lieut. Alan Herbert Hardy (Royal East Kent Yeomanry) (Maurice Farman Biplane, Military School, Montrose). Sept. 21st, 1915.

1776 Lieut. Eric McCrae Gilmore (9th The Suffolk Regt.) (Maurice Farman Biplane, Military School, Montrose). Sept. 22nd, 1915.

1777 John George Woodley (L. and P. Biplane, London and Provincial School, Hendon). Sept. 22nd, 1915.

1778 Lieut. Ronald Blatherwick (3rd The Royal Scots Fusiliers) (Maurice Farman Biplane, Military School, Montrose). Sept. 22nd, 1915.

1779 Lieut. William Harold Primrose (7th Argyll and Sutherland Highlanders) (Maurice Farman Biplane, Military School, Montrose). Sept. 22nd, 1915.

1780 2nd Lieut. Matthew Talbot Baines (Royal Wiltshire Yeomanry) (Maurice Farman Biplane, Military School, Montrose). Sept. 22nd, 1915.

1781 2nd Lieut. Lawrence Arthur Wingfield (6th Royal Fusiliers) (Maurice Farman Biplane, Military School, Birmingham). Sept. 22nd, 1915.

1782 Flight Sub-Lieut. George H. Bettinson, R.N.A.S. (Maurice Farman Biplane, Central Flying School, Upavon). Sept. 22nd, 1915.

1783 Lieut. George Douglas Hill (7th Hussars) (Maurice Farman Biplane, British Flying School, Le Crotoy, France). Sept. 22nd, 1915.

1784 Montague Vivian Morgan (Beatty-Wright Biplane, Beatty School, Hendon). Sept. 23rd, 1915.

1785 Frederick Edmund Sargood (L. and P. Biplane, London and Provincial School, Hendon). Sept. 24th, 1915.

1786 Lieut. John Clisdal, S.A.M.R. (Maurice Farman Biplane, Military School, Birmingham). Sept. 24th, 1915.

1787 Flight Sub-Lieut. Cecil Hugh Hayward, R.N.A.S. (Grahame-White Biplane, Royal Naval Air Station, Chingford). Sept. 24th, 1915.

1788 (Hydro-aeroplane).—Donald Stuart Calthorpe Macaskie (N.A.C. Hydro-aeroplane, Northern Aircraft Co., Bowness-on-Windermere). Sept. 24th, 1915.

1789 Sergt. Arthur William Wilson, R.F.C. (Maurice Farman Biplane, Military School, Brooklands). Sept. 24th, 1915.

1790 Flight Sub-Lieut. Geoffrey Preen, R.N.A.S. (Maurice Farman Biplane, Royal Naval Air Station, Chingford). Sept. 25th, 1915.

1791 2nd Lieut. William Robert Douglas Shaw (2/7th The Essex Regt.) (Maurice Farman Biplane, Military School, Birmingham). Sept. 25th, 1915.

Extension of the Hours of Opening the Club.

The Club is now open from 9 a.m. to 10.30 p.m. each day, including Sunday.

THE FLYING SERVICES FUND

administered by

THE ROYAL AERO CLUB.

THE Flying Services Fund has been instituted by the Royal Aero Club for the benefit of officers and men of the Royal Naval Air Service and the Royal Flying Corps who are incapacitated on active service, and for the widows and dependants of those who are killed.

The Fund is intended for the benefit of all ranks, but especially for petty officers, non-commissioned officers and men.

Forms of application for assistance can be obtained from the Royal Aero Club, 166, Piccadilly, London, W.

Subscriptions.

Total subscriptions received to Sept. 22nd, 1915	£	5	d.
Collected at the Westland Aircraft Works, Yeovil	9,576	15	3
Collected at the Westland Aircraft Works, Yeovil	0	16	0

(Second subscription) 1 7 8

Total, September 29th, 1915 ... 9,578 18 11

166, Piccadilly, W. B. STEVENSON, Assistant Secretary.

Air Raid Risks.

REPLYING to Sir John Lonsdale in the House of Commons last week, Mr. Runciman, President of the Board of Trade, said that he had considered the question of holders of debenture secured by property insured against fire but not air raid risks. As at present advised, however, he did not think special legislation compelling trustees to insure such property against damage by enemy aircraft

was necessary. On Tuesday a question was asked as to whether the Government intended to introduce legislation which might determine the doubt which existed as to the incidence of liability to repair or rebuild leasehold property damaged by aircraft, in cases where "war risks" were not mentioned in leases. Mr. McKeena said he doubted the desirability of introducing legislation of the kind.

FROM THE BRITISH FLYING GROUNDS.

London Aerodrome, Colindale Avenue, Hendon.

Grahame-White School.—Last week, straights with instructor: Probationary Flight Sub-Lieuts. Aplin, Biscoe, Corry, Cross, Davenport, Gammon, Graham, Hadow, Hackman, James, Man, Sadler and Till. Straights alone: Probationary Flight Sub-Lieuts. Biscoe, Cross, Corry, and Man. Circuits alone: Probationary Flight Sub-Lieut.

last week:—With instructors on Beatty-Wright machines: Messrs. Arbon (20 mins.), Baldwin (10), Bryne (10), FitzHerbert (5), King (15), and Tolhurst (5). On Caudron machines: Messrs. Begg (30 mins.), Bowick (20), Brown (10), Collett (10), Collier (35), Cowper (10), Cumming (25), Fawcett (30), Gayner (10), Hodgson (50), Hoskins (10), L. F. Jones (20), Lashmar (30),



Copyright, F. N. Birkett, from the F.N.B. Series of Aviators.

Pupils who have just obtained their *brevets* at the Ruffy-Baumann School, Hendon.—Left to right: Mr. W. B. Young, Mr. Norman Wallis, Mr. Percy A. F. Belton.

Hadow. Circuits with instructor: Probationary Flight Sub-Lieuts. Biscoe, Cross, Gammon, Hackman, Hadow, and Till.

Instructors during week: Messrs. Manton and Winter.

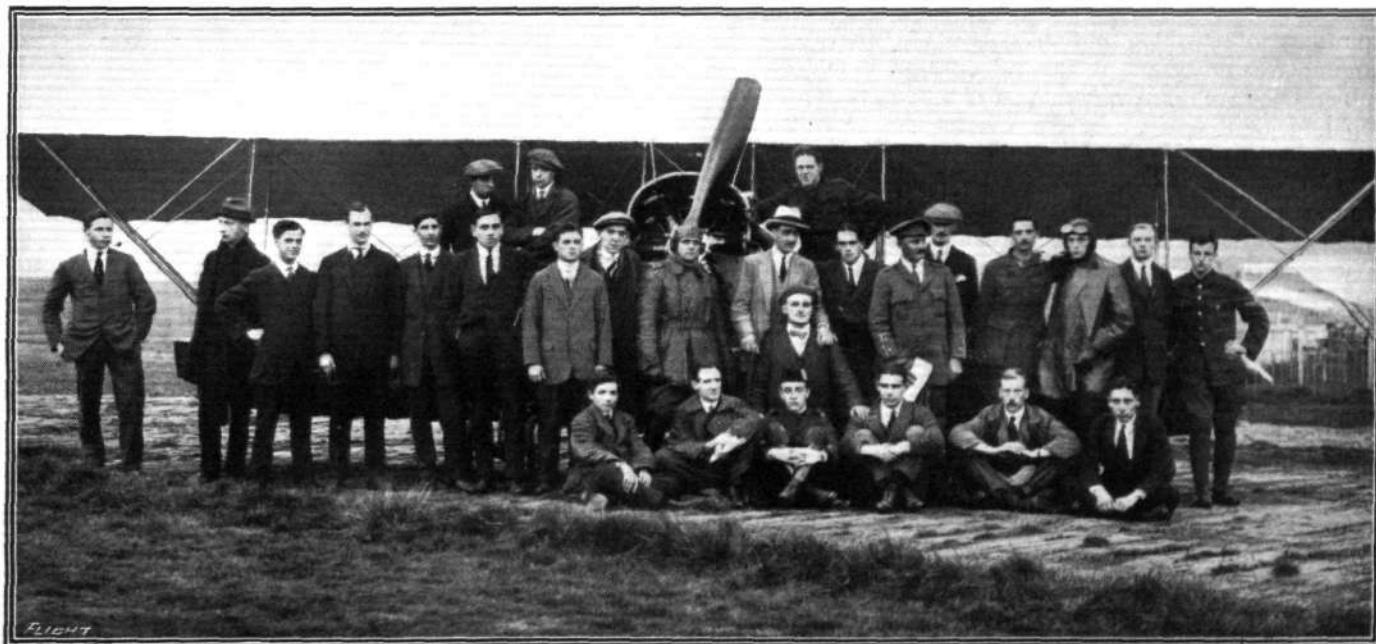
Grahame-White Civilian School.—Straights last week with instructor: Messrs. De Meulemeister, Ellis, Hughes, Jones, and Lieut.-Commander Spencer.

Instructor during week: Mr. H. G. Russell.

Beatty School.—The following pupils were out during

Mellings (10), Moxon (55), Nash (10), Nicholson (25), Overton (20), Owen (40), Rimington (20), Stagg (20), Symington (10), Patterson (60), Murdock (30), Duffus (40), Brynildsen (30), and Podmore (10). The instructors were Messrs. G. W. Beatty, W. Roche-Kelly, C. B. Prodger, R. W. Kenworthy, A. E. Mitchell, and G. Virgilio, the machines in use being Beatty-Wright propeller biplanes and Caudron tractor biplanes.

Certificates were taken by Messrs. L. L. King and



Beatty Flying School Pupils at the Hendon Aerodrome taking instruction on the Caudron. The figure in the centre (apparently wearing a "Harry Tate" safety helmet) is G. Virgilio, the school's latest instructor.

M. V. Morgan on Beatty-Wright machines, and by Mr. P. B. Moxon on a Caudron machine, each of these pupils making excellent flights throughout.

Exhibition flights were given on Thursday, Saturday, and Sunday.

Hall School.—The following pupils were out receiving instruction during last week: With H. F. Stevens: A. Watson. Doing circuits or figures of eight with *vol plané*.—With Cecil M. Hill: Messrs. Mason, B. Watson, Brandon, Wilkins, Bangs, Hooker, Hall, Hamer, Cook, Watkins, Bayley, Punnett, Stirling, Butterworth, and Broad. Doing circuits or half circuits.—With Chas. Bell: Messrs. Seward, Nicolle, Lieut. Bell, Arnsby, Wooley, Dodds, Dresser, Evans, Manley, Shum, Bond, Sepulchre, Camberbirch, Butterworth, Ackroyd, and Stirling. All doing straight flights or rolling practice.

London and Provincial Aviation Co.—During last week, pupils doing rolling: Messrs. Little, Law, Northrop, Lander, Dawson, Roberts, Medaets and Jowett. Doing straights: Messrs. Ellis, Lewis, Knowles and Dalrymple. Half-circuits: Messrs. Rochford and Blackburne-Maze, Pupils doing circuits and eights: Messrs. Franklin and Woolley.

Four excellent *brevets* were taken this week by Messrs. Grimwade, Woodley, Sargood and Jamieson.

Instructors: Messrs. M. G. Smiles, W. T. Warren, G. Irving and C. Jacques.

Ruffy-Baumann School.—Much engineering and constructional work has been completed, last week, by a large number of pupils, and Mr. Griffith has shown unceasing energy in this branch of the school.

The following pupils have been given full instruction: Griffiths, Prothero, Stewart, May, Sherwood, Bolton, Harkness, Cole, Cuthbertson, de Grauw, Reed, Johnston,

Thomson, Burnard, Liddell, Chambers, Bailey, Gallop, Capt. Fairbairn, Crawford, Ball and McBean.

Instructors: Edouard Baumann, Felix Ruffy, Ami Baumann and Clarence Winchester.

Midland Flying School, Birmingham.

THE weather in the Midlands for the past two weeks has been very unfavourable for school work, only a few pupils receiving instruction. Mr. S. Summerfield, the instructor, having been in the doctor's hands, was unable to devote his usual time instructing. A new machine has arrived at the school in the way of a two-seater 60 h.p. Anzani-Blériot, that is being thoroughly overhauled and fitted with dual controls.

Northern Aircraft Co., Ltd.

The Seaplane School, Windermere.—A perfect flying day on Friday, last week, made up for poor weather during the rest of the week. With instructor: Barber (13 mins.), Benson (12), Inglis (12), Ingham (10), Macintyre (12), Macaskie (13), Johnson (11), Part (16), Robinson (12), Robertson (16), and Shaw (20). With instructor as passenger: Lawton (17 mins.), Macaskie (25), Reid (17), and Slingsby (23).

D. S. C. Macaskie secured ticket, finishing with a very pretty *vol plané*.

Instructors: Messrs. W. Rowland Ding, J. Lankester Parker and W. Laidler. Machines: N.A.C. pusher, 80 Gnome.

The 50 Gnome not giving sufficient margin of lift when floats become heavy through saturation, it was decided to fit 80. Machine was re-wired with cable instead of piano wire and the tail was re-designed. She goes up like a lift now. A new biplane is well forward in the works.



FLYING AT HENDON.

J. H. MOORE was the early bird last Saturday afternoon. At about 3 o'clock he brought out his 50-55 h.p. biplane and took up the worm (metaphorically speaking, in parentheses). Twenty minutes later he made a solo flight, spiraling and banking in fine style. On inspecting the engine after this flight, it was noticed that one of the stay-tubes was developing a crack, so this was taken out and repaired right away. In the meanwhile, M. Osipenko was away on the 100 h.p. G.-W. five-seater, while a Curtiss tractor was being Pickled. It being announced that passenger flights could then "be booked at the office under this stand," J. S. B. Winter and Marcus D. Manton proceeded to deal with the resulting freights on the 50 h.p. G.-W. school 'bus. Moore's engine stay having been repaired, he made another flight, and G. Irving ascended on a 45 h.p. L. and P. biplane. It was then that heart-rending cries were heard, and seeing a crowd gathering near the G.-W. 'bus rank, we hastened thither to investigate, and, if necessary, render first aid. On arriving, we were relieved to find that it was only judgment being given in connection with the "giving 'em socks" competition, Manton and A. M. Ramsay being the competitors. Fortunately at the time the entries for the competition were exposed to view there weren't any machines up, otherwise—? It is equally fortunate that "FLIGHT" does not issue coloured supplements, so that in not illustrating the said entries our readers are spared much agony and the publishers

the considerable expense in sumptuous colour blocks. However, Manton was disqualified for having two of different breed—Heavens! one was sufficient—so the final was fixed for another time. In the meanwhile the anti-aircraft corps turned out—and no wonder!—and put in some drill. After conditions regained their normal some more flying took place, Moore taking up a passenger, and Irving also going up again. The two Baumans, Ami and Edouard, on Ruffy-Baumann biplanes, completed the list of pilots out.

Manton, later in the evening, put up a fine flight on the 100 h.p. G.-W. scout.

There was a good spell of flying on Sunday afternoon, although the wind was much stronger than it was the previous afternoon. Marcus D. Manton, J. S. B. Winter and M. Osipenko were all out on the G.-W. 'buses, the latter pilot flying the 100 h.p. five-seater aero-'bus, as well as the 50 h.p. school 'bus. C. B. Prodger and W. Roche-Kelly banked on Beatty-Wrights, J. L. Hall "exhibitioned" on one of his Caudrons, and E. Baumann also obliged on the 60 h.p. Ruffy-Baumann.

During the afternoon Harry Hawker came over on an 80 h.p. Sopwith biplane and executed various evolutions, including loops. Amongst the visitors we encountered Lieut. E. F. Norris, R.F.C., who used to be one of the G.-W. pilots in the pre-war days. He was looking remarkably well, having nearly completed the well-earned rest granted him after his accident at the front.

EDDIES.

IT appears that the German custom of erecting wooden idols into which nails may be hammered at so much a time, is spreading to the German aviation world. At a recent meeting with the German Minister of State, v. Bassewitz, in the chair, it was resolved to erect a wooden model of a Gotha Taube to commemorate the great importance to which Gotha has risen in the German aviation industry during late years. The Taube model has a span of 4½ metres, and is to be mounted on a granite pedestal, the sides of which are to carry views of enemy towns that have been bombed by Tauben. The money accruing from the anticipated industrious hammering of nails into the Taube is to be distributed by the National Fund for the relief of dependants of flying officers killed or incapacitated on active service. The

Duke has consented to have the monument erected in one of the parks surrounding the ducal palace.

x x x

I have long been expecting to see a reproduction in the German aeronautical papers of the official poster issued several months ago and prominently displayed throughout this country. In a recent issue of *Flugsport* the poster is reproduced with a comment to the effect that England's fear of German aircraft must be even greater than was generally supposed in Germany. It is pointed out that such a poster can hardly have contributed towards a complacent frame of mind among the inhabitants.

x x x

The following appreciation by a German correspondent to *Flugsport* of the air services of our Russian Allies is of interest, coming as it does from the camp of the enemy:—

"We see a great deal more of the Russian pilots than is generally supposed. Daily the Russian bumble-bees hum their droning song over the most varied places of our eastern front. They peep as inquisitively down into our trenches in Galicia as they espied our artillery emplacements in Poland and Courland. In order not to be outdone by their French brethren, they even drop bombs on peaceful towns (!) and incendiary bombs on magazines situated far into enemy territory. East Prussia also knows something of the unpleasant frame of mind of the upper Rhine on certain days. Pin-pricks, it is true, but pricks all the same. The border town of Willenberg saw and sees more of the Russian 'eggs' fall from the sky than is compatible with comfort. Soldau, Ortelsburg and Insterburg have had a taste of them too."

x x x

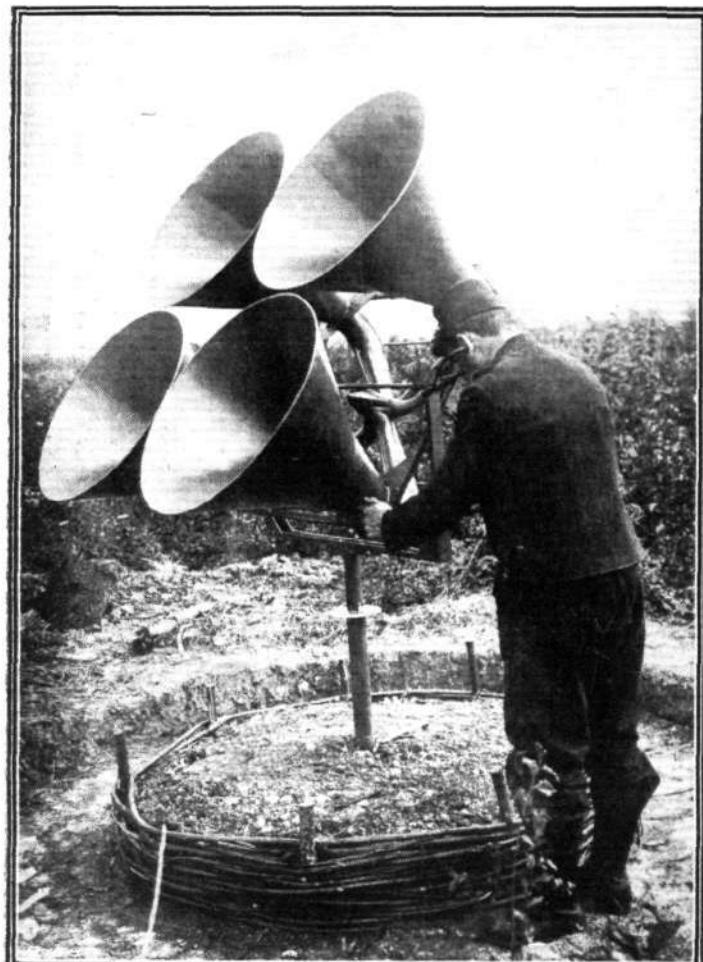
"The Russian machines? Well, what I saw there seemed good material. That is to say, Russia, the land of imported culture, possesses of course little in the way of home-built machines. The pride of the Tsar are the Sikorskys. The giant machines that I have seen during the war were considerably more elegant and of a better shape than the old type. Some unwieldiness and a certain amount of sluggishness in manoeuvring still clings to the flying elephants of 1915, but on the other hand they carry more men and bombs. Nine to twelve shells were released with lightning rapidity in one throw. The speed was astonishing. So was the speed of the machine. What puzzled me most was the motors. At any rate, the sound was not that of the old Argus kettle. It sounded more like some air-cooled motor. I am not prepared to swear that it was a Gnome, however."

x x x

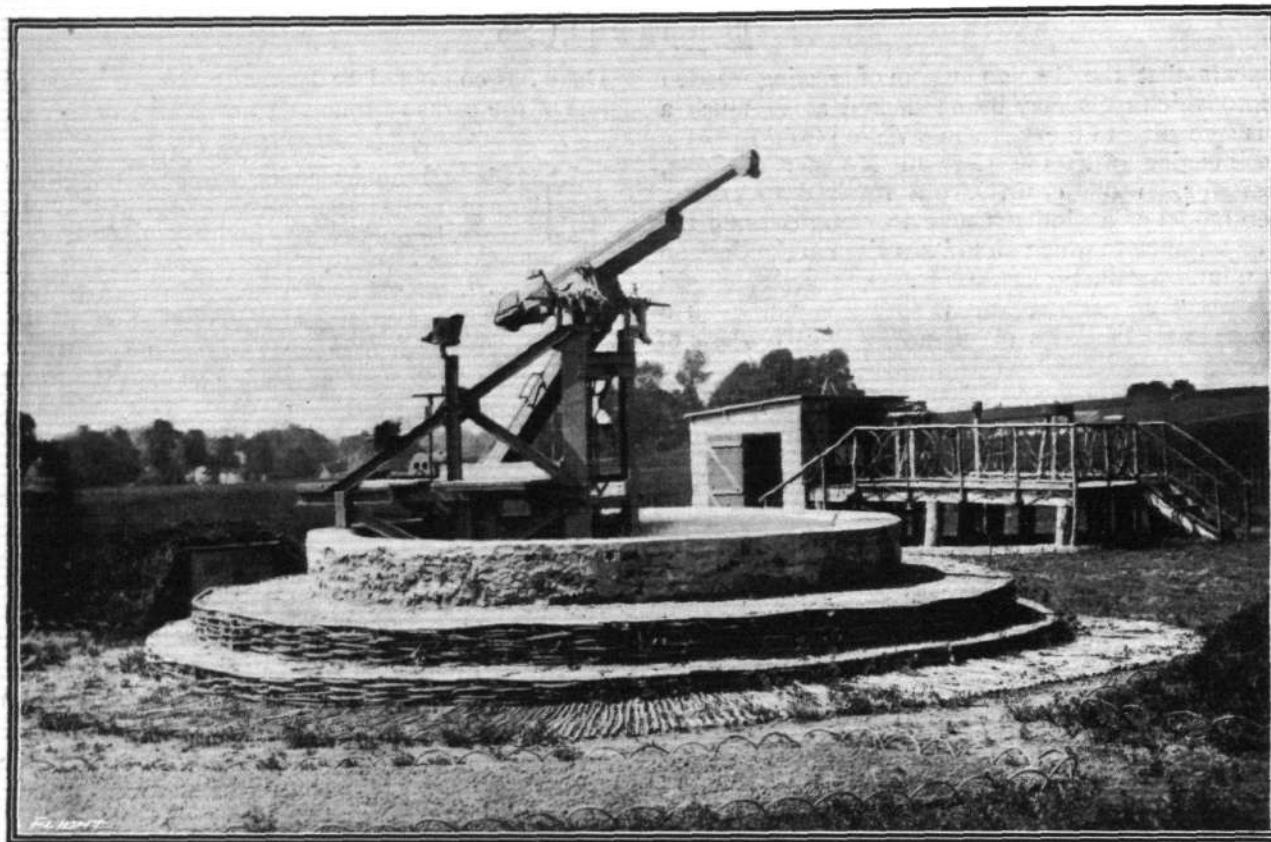
"The Sikorsky was the only original Russian machine that I saw. Farmans and Voisins proved useful and neat as French presents. Regarding various American biplanes said to have been brought down by the Germans I could not, unfortunately, learn any particulars. The peculiar wings of the Wright were not at any rate seen in the air."

x x x

"In Courland the German officers have an almost infallible distinction of aeroplanes to guide them. If it is a biplane one must wait for bombs or fire balls. If, however, a monoplane shoves up above the horizon the chances are a hundred to one that it is a Russian. In



AT A FRENCH POSTE D'ECOUTE.—Among the many devices employed by our French Allies in their great organisation of the defences of Paris are high-angle guns, searchlights, and instruments for gauging the height, distance and speed of approaching aircraft. Needless to say, the numerous *postes* scattered over the districts lying between Paris and the various points of the firing line are in telephonic communication with headquarters in Paris. In order to detect the approach of aircraft before this becomes visible to the naked eye or even audible, the instrument shown in the above photograph is employed. This consists of four huge horns, which gather up almost the slightest sound, and magnify it by means of a microphone, so that it is impossible for either enemy or other aviator to approach unheard. It is evident that such an instrument is especially suitable at night, when, as a rule, the engines of aircraft can be distinctly heard when the craft itself is quite out of sight.—Official photograph issued by the French War Office.



HOW PARIS DEFENDS HERSELF AGAINST ZEPPELIN AND AEROPLANE ATTACKS.—One of the French anti-aircraft guns and its rotatable mounting.—Official photograph issued by the French War Office.

aviation parlance all German machines are Albatroses and all Russian 'buses Deperdussins. The Russian Deps. are probably the best of all our enemy's machines. How much they differ in detail construction from the original French machines is difficult to ascertain. They certainly seem to possess all the advantage of these small racers. Being difficult to hit on account of their small surface, they develop, for a military aeroplane, astounding speed, and do dare-devil glides and dexterous turns. Recently a Dep. was fired at by anti-aircraft guns. During a quarter of an hour about 87 shells burst all round the Russian. The left wing was seen to catch fire, and twenty kilometres away the machine was still seen to be flying, the while it was burning."

x x x

"On the western front Artillery officers are running about who have brought down one or more French machines without receiving any appreciation in the form of distinction, while in the eastern theatre of war the commander of an anti-aircraft train who has damaged a Russian machine, without, however, having brought it down, receives the iron cross. Truly value is determined by demand and supply. But that aviation in the east, even among our enemies assumes such importance is a glorious testimony to the technology, progress, and culture of the twentieth century."

x x x

Things are humming at the L. and P. school up Hendon way. Since acquiring the new tract of land adjoining the London aerodrome it has been found that there is sufficient room for several more machines than are at present in use, and as the number of applicants who wish to join the school far exceeds, without overcrowding,

the present capacity of the school, the manager has decided to increase the fleet of machines. To this end, three Caudron biplanes have been acquired, one with a 40 h.p. Anzani engine, and two with 36 h.p. motors of the same make. With such an addition to the tuition 'buses, the L. and P. pupils should soon be stronger in representation even than they have been up to now—on both sides of the fence.

x x x

As a rule, one is somewhat inclined to look upon the type of school machine known in aerodrome parlance as "box-kites" as something to be associated with "straights," "circuits" and at most laborious climbs up to a few hundred feet, followed by, perhaps, a few spirals. This impression of the old front elevator type may be justified, when having in mind some of the ancient machines that have been in service—and none too gentle service, either—for a few years, but if one includes in the term the new machines designed and built by "Bill" Law of the Grahame-White Aviation Co., which are brought in under this heading by their possession of a front elevator, one must hasten to modify preconceived ideas. Those of us who have followed the construction of these machines from the start have long appreciated their capabilities, but even to us the performance actually put up by one of these models came as a surprise. Some little time ago Mr. Manton, accompanied by an observer, took one of a batch up to a height of 1,000 ft. in the surprisingly short time of 2 mins. 50 secs. This is little short of marvellous when it is remembered that a passenger was carried in addition to the observer, and that the engine—a Le Rhone—was of 60 h.p. only.

"ÆOLUS."

ARMCHAIR REFLECTIONS.

By THE "DREAMER."

Pay and be Proud.

I AM glad I am not Chancellor of the Exchequer, I should make a bad Budget, and many enemies. It must be a thankless sort of task, judging from what I have seen of it, to make people spend money on themselves. To me it has always been a pleasure, this spending of money in gratifying my inclination to possess. Do I see a tie in the window, which is not covered in pink and yellow spots, I must needs become the possessor of it before the mysterious person who governs fashion in men's wear decrees that puce-pink shall oust my beloved grey.

I part with the small coins necessary to the purchase with pleasure, and feel proud in my possession. I really think that if the Chancellor decreed that grey ties should pay a premium of 50 per cent. in order that all certain others should be banned, I should pay pleasantly.

"If England to itself do rest but true." The words are easily written, glibly spoken. On the face of it, in the selection of words, in the composition it formulates its self into a sentence that carries weight with it, and which cries aloud not to be lightly thought of. "If" is a great word, it is full of meaning, it has a world of possibilities behind it.

It tells of what could be in the observance, hints at frightful possibilities in the failure.

England MUST be true to herself now, otherwise there stares us in the face, either failure at the end, or at least a long drawn out success, the sweet fruit of which will be less sweet if not embittered by procrastination.

But is England true to herself? Take the word England to mean, as it undoubtedly means in the above sentence, not an empire but individual man. Are we, each and every one, true to England, to ourselves? You think so. Well, I know you do. We all think that of ourselves. We are Britons. We thump ourselves on the chest and shout it to the four winds of heaven, when there is anybody around to hear. We declare that we will see this thing through to the bitter end, we will sacrifice everything personal to win; we will win. This is our platform oratory. Let us retire to our bedroom where there are none to hear, and take counsel of ourselves.

Now then, what about that two-pence on your ounce of tobacco, and the penny on your packet of cigarettes? Of course, you have said you will give up smoking, not because you cannot afford to pay the small increase, but because you want to frustrate poor Mr. McKenna, or, at least, shoulder the expense off on to somebody else. You are going to drink less tea and coffee. You won't buy that cheap car. Your wife will not now get that Paris hat.

There is one thing you will have to pay because you can't help yourself, and that is the income tax; and there is one thing you will willingly pay because you like it, and that is the patent medicine duty. The average Englishman would not be quite happy unless he were half full of some weirdly strange concoction.

To put it quite plainly, you are trying all you can to slide out of your obligations. You have told your nation to go ahead, to carry on. You have shouted for more guns, for more shells, for more aeroplanes, for more men, for more of everything that is wanted to enable England to

remain yours, and you have expressed your willingness to pay, and now you don't want to, if you can help it. But you can't. You've got to pay, whether you like it or not. The best thing you can do if you are not a coward, if you really ARE a Briton, if you have an ounce of manhood in you, and any respect for all those young lives laid down somewhere out there as part of the purchase price in buying England for you, is to come out into the open, and with apologies to Shakespeare, shout "Lay on, McKenna, and damned be he who first cries, Hold, enough."

To hell with the Huns even if we have to buy Rolls-Royce cars to transport them there.

You Press the Button, We Fine You £25.

I have gazed for hours on end in the windows of those lovely shops where amidst gracefully-draped plush and silk curtains, lucky little cute cameras repose on tiny pedestals, and stare me out with their one unblinking eye. They are such dear little chaps to look at, and appear so innocent and fool-proof, that even without the wealth of literature calling attention to the simplicity of photography under modern conditions, I have on several occasions nearly bought one. I think it is the simplicity of the thing that attracts me. I have watched other people operate, and almost know the routine by heart. You place the end of the paper through the slit in the right-hand roller, and turn gently until something happens. Your film is now ready to receive the masterpiece—simplicity itself.

Now stroll out to the nearest anti-aircraft station. Pull out the front of your camera until the pin, *b*, engages with the block, *b*, and the pointer points to the figure on the right-hand side of the plate on the left-hand side of the camera, indicating the distance at which you think the station is away. Look at your watch to get the time of day, make up your mind whether the anti-aircraft station is a high sun behind clouds, an open seascape with heavy foreground, or a portrait under trees, consult your timer, twisting the dials round either way until the pointer indicates some awful number with an *f* in front of it. Take this number as meaning June, and add ten for each month backwards or forwards towards winter, and divide the result by the speed of your film, and you have the exact exposure.

Look in through the little window of the finder. At first you won't find anything, except sky, and that is where you think the grass ought to be. Be not discouraged. Wriggle your body about until the station suddenly appears, and shoot on sight. There are lots of little tanks with handles for developing the film, with the aid of more simple calculations with regard to time and temperature, but you won't need to bother with those. An obliging government will develop them for you, and you will get off with £25 if your landlady says you are a nice innocent fellow.

I once nearly invented a photographic process when a boy, by rubbing apple juice on paper, which went brown on exposure, but fortunately like all great inventors I got switched off on to a side-issue in chemistry by writing sweetheating letters in onion ink. I say fortunately, because I should not like to think that any invention of mine helped to get a poor chap mulcted in a big fine for photographing a square palisade with a white ensign flying over it.

SOME AMERICAN AERO ENGINES.

THE KEMP.

ONE of the few American air-cooled Vee engines is that manufactured by the Kemp machine works of Muncie, Ind., an 8-cylinder 75 h.p., with cylinders set at 90°. As with the Renault engine, the cylinders are cooled by a blower mounted on the propeller end of the crankshaft. This blower drives a current of air through two outlet pipes to manifolds on each group of cylinders, and thence round each of the cylinders, under aluminium jackets surrounding the latter. After circulating round the cylinders, which have cooling fins formed on them in the usual way, the air passes out immediately opposite

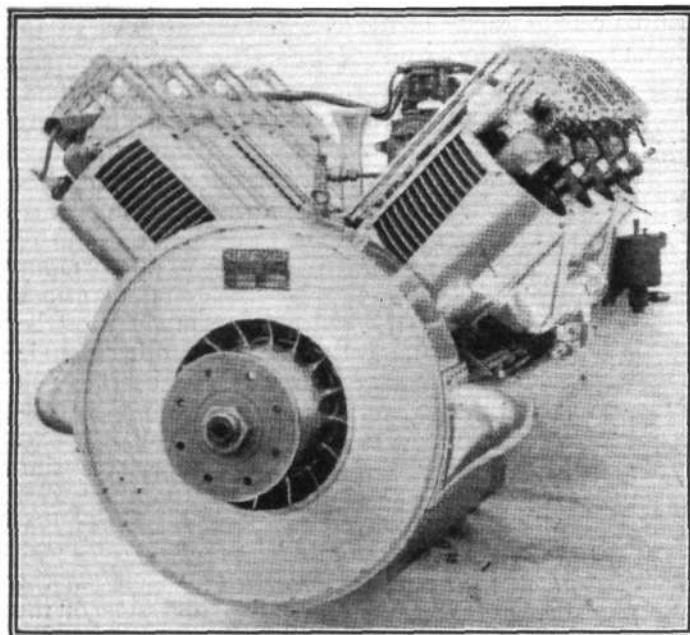


Fig. 1.—The 80 h.p. Kemp air-cooled aeromotor. View showing the cooling fan.

the point of entry. Each cylinder thus gets an equal quantity of air and all the parts are uniformly cooled. The whole of the cooling gear, consisting of the blower fan, casing, manifolds, and jackets, are of aluminium, and only weigh 31 lbs., which compares very favourably with the weight of radiators, pumps, water, &c., in a water-cooled engine of equal power. In practice this arrangement has given every satisfaction, over-heating troubles being, it is claimed by the makers, eliminated.

The cylinders, of semi-steel, having a bore of 4½ ins. and a stroke of 4¾ ins., are cast separately with turned circumferential cooling ribs, and are held down on to the crankcase by studs passing through flanges formed on the cylinder base.

The valves are located in the head immediately over the piston, a position admitted to be the best for maxi-



Fatal Accident to Captain Blood.

ON the 28th ult., an inquest was held relative to the death of Captain Bindon Blood of the 4th Hussars, who died on the 25th from burns received the previous day. According to the evidence, the deceased while doing some sharp turns apparently lost control of his machine, which fell to the ground. The petrol tank caught fire, and Captain Blood was enveloped in flames. A verdict of "Accidental Death" was returned.

Fatal Accident in France.

IT was reported from Paris on Saturday that Lieutenant Maudhuy, son of General Maudhuy, had been killed in an aeroplane

mum efficiency. Both inlet and exhaust valves, made from Tungsten steel, are mechanically operated from a single camshaft, situated between each group of cylinders, through tappet rods and rocker arms. Very light pistons are employed, made of the same material as the cylinders, and each having two concentric "Wasson" rings and three oil grooves. The connecting rods are of an aluminium-bronze alloy, a material used with success on previous models, which, it is claimed, has a strength equal to that of steel and is guaranteed not to crystallise and fracture. In section they are similar to the usual H type, except that they have an extra rib down the centre. The crankshaft is cut from a solid billet of special Vanadium steel, heat treated and bored throughout. It is supported in five bearings, of high speed nickel-babbitt, whilst ball thrust bearings taking either push or pull are also provided. Provision is made at the blower fan end

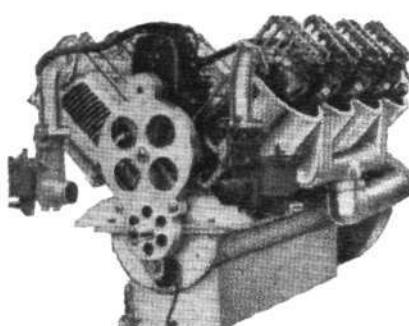


Fig. 2.—The other end of the 80 h.p. Kemp air-cooled aero-motor.

of the crankshaft for the attachment of either hand or electric starting gear. The two-piece crankcase is of high strength aluminium alloy, thoroughly webbed and ribbed.

Lubrication is a combination of forced and splash, a gear pump forcing a constant supply of oil from the sump, which has a capacity of four gallons, on to the crankshaft bearings and camshaft, the cylinders being lubricated by splash. Two Zenith carburettors are employed, one for each group of cylinders. A single magneto is fitted, driven from the camshaft gear wheel. Unlike the Renault engine, the propeller or tractor screw is mounted direct on the crankshaft. The makers recommend the use of Paragon propellers or tractors, having found this particular make most suitable for Kemp motors. The rated horse-power (75) is developed at a moderate engine speed of 1,200 r.p.m., although it is guaranteed to turn an 8 ft. diameter by 5 ft. pitch propeller at 1,250 r.p.m. on the test bench, with a corresponding increase in the air. The weight of the engine complete with magneto, carburettor, &c., is 380 lbs., the weight per h.p. being 4.7 lbs. The petrol and oil consumption is 4 gallons 3 quarts per hour respectively.



accident. The young aviator had already been honoured with mention in Army Orders for having made a gallant attack against six German aviators.

Dutch Military Aviation.

IN the Budget presented to the Dutch Parliament on the 21st ult. funds were asked for by the Minister of War for the requisite extension of both the *personnel* and *materiel* of the Dutch Flying Corps.

It is reported from New York that the Dutch Government have ordered twenty military aeroplanes with the Glenn L. Martin Co. of Los Angeles, California.

NOTES ON ACETYLENE WELDING.

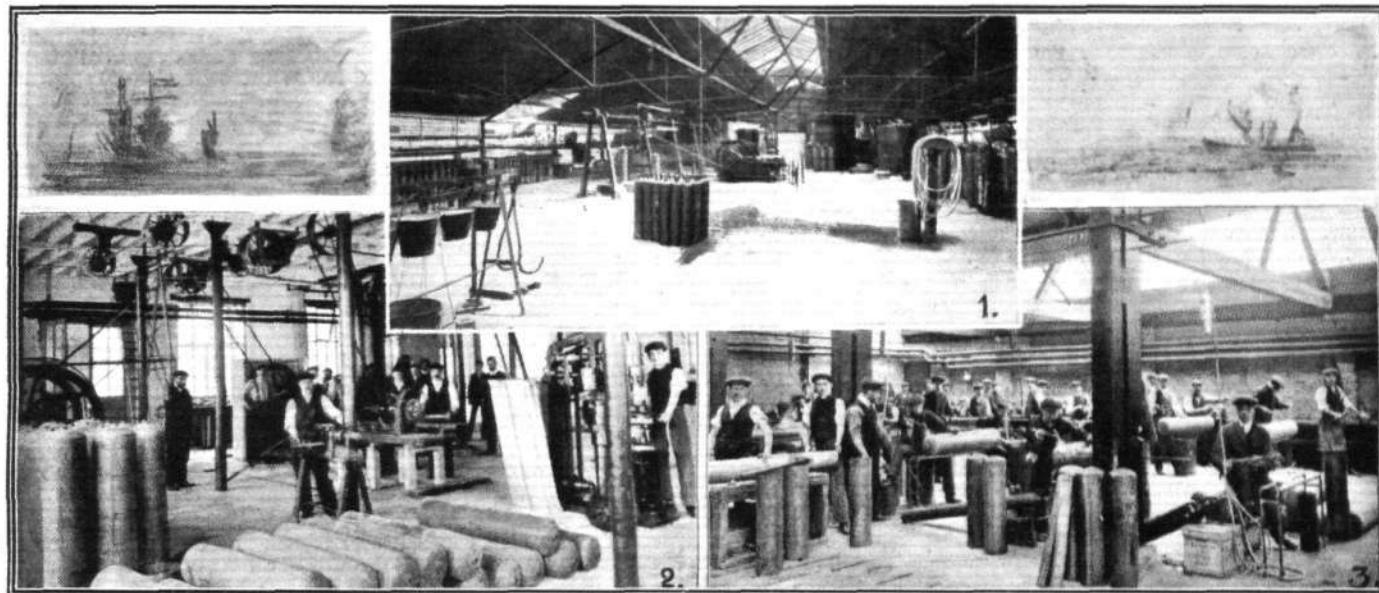
IT is interesting to consider how the development of one industry affects others of a subsidiary nature which, superficially at all events, seem to be not in the least directly concerned. Thus, in the case of the growth of the aeronautical industry, it is found that not only is a stimulus given to such obviously allied crafts as the manufacture of petrol engines, special fabrics, dopes, &c., &c., but so far-reaching are the effects that they have been felt even by the producers of calcium carbide and acetylene gas. At first sight the connection between these and aviation is obscure, but it is safe to say that much of the recent progress in the art and science of autogenous welding is due to its application to the building and repairing of aeroplanes, and it is exactly here that the connection arises.

For modern welding acetylene is almost indispensable, owing to certain advantages the oxy-acetylene process possesses over the older systems, employing hydrogen or coal gas. At the same time, for aeroplane parts into the

impurities, such as sulphur, phosphorus and ammonia, are and must of necessity be removed, since it is impossible to compress acetylene into the porous material—acetone—unless it is first thoroughly freed from these deleterious substances.

A further advantage of the high-pressure system is that a nearly perfect intimacy of mixture of the two gases can be delivered at the nozzle of the blow-pipe, while the adjustment of the flame, once set, remains correct. For this reason it is simpler in use than the low-pressure system, and to a large extent discounts any lack of individual skill possessed by the operator. Naturally, dissolved acetylene is more expensive than that produced by a generator, but, on the other hand, it not only possesses the foregoing advantages, but because of them also gives a higher working efficiency.

The Acetylene Illuminating Co., Ltd., of 268 and 270, South Lambeth Road, S.W., are, of course, the makers of dissolved acetylene, and it is interesting to record that



VIEWS OF THE ACETYLENE ILLUMINATING CO.'S WORKS.—1. Interior of compressing works, where the cylinders are charged. 2. Cylinder finishing department. 3. Cylinder welding department.

making of which the art of welding has entered, it is essential that the quality of the work should be of an altogether superior description to that which might conceivably be considered good enough in ordinary practice, and as the quality of the work depends upon the purity of the gases to possibly even a greater degree than skill of the workman, so it is that the producing of pure acetylene and improvements in the manufacture of carbide have assumed a higher degree of importance.

There are two distinct systems of oxy-acetylene welding in vogue at the present time—one known as the low-pressure system, where the acetylene is delivered to the blow-pipe at a pressure approximately atmospheric from a generator exactly similar in principle to those used for headlights on cars; and the other the high-pressure system, where the gas is contained in a compressed state in cylinders containing a porous material. Both are capable of good work, but the high-pressure system from dissolved acetylene is preferable for such really important work as the construction and repair of aeroplane parts on account of its absolute purity. In the manufacture of dissolved acetylene the gas is generated in the ordinary manner, in bulk, and before being pumped into the cylinders is thoroughly washed, dried and purified. All

this firm were the pioneers of the oxy-acetylene process of autogenous welding, the high pressure system being that first in use, while the low pressure system in its various types has since been evolved from it. This was in 1901, when the use of compressed acetylene was made possible in this country by an exemption from the Order in Council. Though now the actual makers of both high and low pressure plants, this firm strongly advocate the former for all classes of work where great strength in the weld is of consequence. It is found that as a general rule the tensile strength of a joint welded by this system is about 95 per cent. of the original in steel plates up to $\frac{1}{2}$ in. thick, while even for plates $1\frac{1}{2}$ in. thick the figure is in the neighbourhood of 80 per cent.

Some idea of the immense development in the application of high pressure oxy-acetylene welding since its introduction may be gathered from the fact that several thousands of cubic feet of dissolved acetylene are supplied *daily* to the Tyne, Clyde and Irish shipyards and Admiralty dockyards for this purpose; while other large users are found among the great railway companies, tramway authorities, motor manufacturers, engineering concerns of all classes, and, now, the most important firms connected with the building of aircraft.

THE ZEPPELIN CAPTAIN'S STORY.

THE following narrative has been published in the *New York World*, and is the version given by Commander Mathy, who was in charge of the airship which recently visited London and scattered promiscuous murder around amongst women, children and non-combatants, to Mr. Karl von Wiegand, the *World's* correspondent in Germany. We reprint the story, as a picturesque account of what the narrator thinks (or the contrary) occurred. As a journalistic effort it has considerable merit. As a recital of facts anything more ludicrous can hardly be imagined. We are prepared to accept the details of what happened in the Zeppelin. If they are not facts, at least they are painted with the brush of a consummate artist; but if they are as accurate as the rest of the story, well—after reading the note of the Home Office which prefaces Commander Mathy's little effort, let the Zeppelin pilot speak for himself and be judged by facts as we know them.

THE following is passed by the Home Office for publication, with the comment that it contains numerous statements which are quite untrue, and one (to the effect that an anti-aircraft gun has been placed under cover of St. Paul's) which can only be characterised as a falsehood apparently invented to excuse what German aircraft are attempting to do.

"London is a vast military centre and military-defended city in every sense of the laws of war, written or unwritten, as applicable to aerial warfare. Therefore property, from point of aerial attack, so far concerns everything usable for military purposes, such as big railway stations, banks, docks, shipyards, and industrial establishments. If anyone believes London is not 'defended,' and pretty well defended at that, he should have stood by my side in the front gondola of my Zeppelin in my last attack on London a few nights ago, and seen the red, angry flashes of scores of cannon belching shrapnel at my craft."

So spoke Lieut.-Commander Mathy, of the Zeppelin aerial cruiser squadron of the German Navy.

"The day of battles in the air and attacks from the air, of which romance writers have long dreamed prophetic, though, perhaps, somewhat fantastic dreams, has come to stay. Only the future can tell how much of the futuristic, impressionistic visions in the air pictured by fictionists in their romances on the subject may come true. Years ago anyone who would have believed Jules Verne's dreams would become more or less a reality would have been regarded as being not entirely normal. Two years' training and service in the big Zeppelin cruisers of Germany's airship fleet attached to our Navy convinces me we are only at the dawn of day of war in the air and from the air, and only at the beginning of a great era of development of aerial crafts which will have great bearing on future wars."

To-day I was so fortunate as to have an opportunity to talk with the man in command of the latest aerial attack on London.

Mathy is commander of the L—, one of Count Zeppelin's latest, biggest, and fastest cruisers of Germany's aerial fleet, the value of which as scouting craft for the navy has been much underestimated abroad, and as fighting craft have, as Count Zeppelin told me in February, by no means reached their final development. That, despite their size, they are not so easily hit and brought down as has been the general impression is evident from the fact that the Germans lost no Zeppelins in any of the numerous attacks on England. Attacking under the cover of night, coming and going with great speed, and disappearing within a few minutes, they are like a vision in the night. The aeroplanes of England's flying corps have so far proved no defence against the Zeppelin raids.

Mathy is a man of perhaps thirty-four years, with closely-cropped hair, which gives him the appearance of an entirely bald, smooth-faced figure, slender and supple as a young woman. He was formerly commander of a destroyer in the torpedo flotilla. Like officers of German submarines I have met, he made the impression of being all nerves, and those nerves of steel.

Mathy and his Zeppelin have participated in every attack made on England from the air. His last, which was on the downtown City of London, was his "century Zeppelin run," or hundredth voyage in the air, counting his training and trial trips, he told me.

"What I call luck has played a big part with me," he declared.

And Mathy has been lucky. Despite something which I cannot mention, but which every superstitious believer in omens and signs

would regard as a very magnet of disaster and ill-luck, Mathy has been lucky. The day before its destruction he was on a Zeppelin which I saw burned and destroyed in the air above Johannistal two years ago, and only missed that trip by some manie (?). He was on a navy Zeppelin the day before the craft was wrecked in a storm on the North Sea off Denmark two years ago, and in some way missed the voyage on the fatal day.

As nothing in this war has appealed more to the popular imagination or awakened greater interest than the war under sea and in the air, I asked Mathy to tell me about his last attack on London. I will so far as I can without disclosing what might touch upon military secrets, and that is pretty much everything about a Zeppelin. Even the secrets of Germany's famous submarines are not guarded as closely or jealously as the Zeppelins. I have been aboard one of the largest U boats and looked through the periscopes, went through from stem to stern, but have never been able to get within gunshot of one of the Zeppelin harbours. Even the officers and crew of war Zeppelins have been carefully kept away from correspondents, or, rather, the correspondents away from them.

I promised Mathy I wouldn't ask him any questions that would get him into trouble with the Admiralty.

"It was my hundredth Zeppelin cruise, counting my training trips, and I was much interested in it because of that, and wondered whether I would safely round out my century," said the commander of the L—. "I had taken my Zeppelin in safety to England and back several times, and learned something of value each trip applicable to the next time. The first time I took my Zeppelin to England it was something akin to discovering a new country, and my impressions were much more vivid than now. It and some of the following were more or less experimental. We had much to learn, despite all our practice and training. It was a new sort of warfare, in which we had, more or less, to feel our way and study aerial strategy, aerial tactics, and to learn to locate in darkness the military points and objects we desired to attack."

"We had to study the aerial currents above the North Sea and England. What we have done to England so far is by no means all that we can do now that we have learned many things we did not know and are necessary to know. The Zeppelins had to be their own scouts and information gatherers. Now, for the first time, my instructions were to attack certain points in the downtown City of London, such as railway stations, bridges, industrial establishments. Strict orders to do everything possible to avoid hitting St. Paul's and other churches, museums, Palace, Westminster Abbey, Parliament, and, of course, residential districts.

"I want to say there's not an officer or man in the aerial fleet who doesn't feel it as deeply when he learns that women and children and other non-combatants are killed, as does a gunner or commander of big guns when he hears his shell didn't strike exactly where he wanted it to, and resulted in the death and injury of non-combatants. In fact, I would much rather stand on the bridge of a torpedo-boat, fighting ship against ship, than attack a city from the air, although not because the danger to me is much greater in the latter."

"Let me say that a Zeppelin voyage to England and back depends largely on the weather and wind conditions. If very favourable it can be made in less time with our new fast cruisers. But you want to know about my last attack on London.

"The weather stations and meteorological balloons attached to the aerial service reported favourable conditions. The colder the weather the more we can carry. The temperature was quite cool when we started, with full magazine bombs which constitute Zeppelin ammunition, and not much unlike shells fired from a ship or siege artillery, which, after all, come through the air, too."

"Soon we were out over the North Sea and moving upon England through the air at a lively speed with a favourable wind. Back of us were the receding shores of Germany, below us the white-capped billows of the North Sea like a watery desert in motion stretching out as far as we can see, without a sign of life except a single fishing craft."

"What was the principal emotion or impression up there on the bridge of your Zeppelin?" I asked the man who makes war from the air.

"My chief impression was speed, and we get very cold. Our new Zeppelins are very much faster than a ship, and I always think of the great difference in wind pressure as compared when I stood on the bridge of my ship. Formerly when commanders' gondolas on older Zeppelins were entirely open this was even more marked. Our new ones have somewhat of a protection in the form of a windbreak. But it's intensely cold 3,000 to 5,000 or more feet in the air, moving at the speed. There is no chance to move about much, of course; no way of warming pilots of aeroplanes, and wearing thick felt boots. Despite that we get cold, very cold,

especially on the last trip. We ate before we started, then occasionally took a pull at a Thermos bottle of hot coffee or tea."

"Nothing stronger, commander?" I broke in.

"No, absolutely nothing stronger."

"Zeppelins have neither bar, kitchen nor dining-room. Zeppelins are teetotalers. We have got to have clear heads up there, and cool steady nerves, the nerves which spirits don't necessarily furnish. And we can't while away our time between firing—for we call it firing, too—and dodging shrapnel by smoking. A Zeppelin is the strictest Sunday School institution; there is no drink nor smoke. Each man's pockets are his pantry, for he carries a snack. I take a bottle of cognac, along with some first aid material, in case someone gets hit." "No doctor?" "No, we carry no doctor. If a shrapnel ball hits any of us we bandage the wounded man as best we can, and give him a drink of cognac, and he has to wait until we get back. If we were brought down I guess there would be doctors there, if we needed any, which would be unlikely. But to return to my narrative."

In short, terse, staccato-like sentences Mathy told the story of the attack. "As the sun sank in the west we were still a considerable distance out over the North Sea. Below us it was rapidly getting dark, but was still light up where we were. On one side or the other was a Zeppelin, in grey war paint, like that of my craft, visible in the waning light against the clear sky, gliding majestically through the air. A low, mist-like fog hung over the spot in the distance where England was. Stars came out and it grew colder. We took another pull at our Thermos bottles and ate something. As we neared the coast I set the elevating planes to go still higher in order that our motors might not disclose our presence too soon.

"I cannot tell you exactly the time or place we crossed the coast-line, as that might be an advantage to the enemy. Men went to the guns which fight off airmen should we be attacked, and the others were each at his post. My lieutenant took his place at the 'firing apparatus,' which releases bombs and controls the speed or rapidity with which they are dropped according to my orders from the bridge on the front gondola. It is a cold, clear, star-lit night, with no moon—one of those nights when distances and objects in looking toward the sky are illusive, and it is difficult to get the range on rapidly-moving objects, while our instruments tell us exactly how high we are.

"The mist disappeared, and in the distance we can see the Thames river, which points the way to London. It is an indestructible guide-post, and a sure road to the great city. The English can darken London as much as they like, they can never eradicate or cover up the Thames. It is our great orientation point from which we can always get our bearings and pick up any point in London we desire. That doesn't mean that we always come up along the Thames, by any means. London is darkened, but was so sufficiently lighted that on this night I saw a reflected glow in the sky sixty kilometres away shortly before ten o'clock. I headed straight for the glow in the sky, and then a point on the Thames, to get my bearings for my objective attacks.

"Soon the city was outlined, still and silent, below in the distance. There were dark spots which stood out from the blur of lights in the well-lit portions. The residential sections were not much darkened. It was the dark spots I was after, and I bore down upon them, as they marked the downtown portion of the city. A large city seen at night from a great height is a fairy-like picture. We were too high to see human beings in the streets below. There was no sign of life, except in the distance moving lights, which were probably railroad trains. All seems still and quiet; no noise ascends from below that penetrates the sputtering motors and whirring propellers. As if in the twinkling of an eye all this changes. There is a sudden flash, and a narrow band of brilliant light reaches out from below, and begins to feel around the sky, a second, a third, a fourth, a fifth, until soon there are more than a score of criss-crossing ribbons. As viewed from a Zeppelin, it looks as if the city had suddenly come to life, waving its arms around the sky, and sending out feelers for the danger that threatens. But our impression was more, that they are tentacles seeking to drag us to destruction.

"London keeps a good watch on the sky. Our motors and propellers soon revealed our presence. First one, then another and another of those ribbons shooting out from the glaring, eye-like searchlights, pick us up. Now from below comes an ominous sound that penetrates the noise of our motors and propellers. There are little red flashes and short bursts of fire which stand out prominently against the black background. From north, from south, from right, from left they appear, and following the flashes rolls up from below the sound of guns.

"It is a beautiful, impressive, but fleeting picture as seen from above, probably no less interesting from below, the greyish, dim outline of the Zeppelins gliding through the waving ribbons of light and shrapnel cloudlets which hang thick. We can see thousands of

small lamps, and amidst these, especially in the black spots, the baleful, gleaming, great eye-like searchlights, and constant red flashes from many guns. But we have no time to admire; our eyes and mind must be concentrated on our work, for any moment we may be plunged below a shapeless mass of wreckage and human bodies shattered beyond recognition. You saw it at Johannisthal two years ago. I had so little time to register impressions that I have to think back now to give you a descriptive word picture of the scene. When first the searchlight picks you up you see the first flash of guns from below; your nerves get a little shock, but then you steady down, and put your mind on what you are there for. I picked up St. Paul's, and with that point of orientation laid a course for the Bank of England.

"There was a big searchlight in the immediate vicinity of St. Paul's, and the English had placed a battery of guns under cover of that church, as I could plainly see from the flashes as they belched shrapnel at us. Perhaps from a military standpoint I would, under the circumstances, have been justified in dropping bombs on the battery, which was very near St. Paul's, but had neither the desire nor the intention to do so, for fear possibly of damaging the church. However, I don't think the English should use churches, museums and similar buildings as a cover or protection for their guns. Although we had been fired upon from all sides we had not yet dropped a bomb. Above the Bank of England I shouted through the speaking-tube connecting me with my lieutenant at the firing apparatus, 'Fire slowly.' Now, mingling with the dim thunder and vivid flash of the guns below, came the explosions and burst of flames from our bombs. With the mind solely concentrated on picking out places previously on the program for attack as being factors having a military bearing on the preparation, concentration or transportation of troops, or places of other military use, and on stopping the Zeppelin and directing the firing, the comparatively short time above London appeared much longer than it actually was. We soon observed flames bursting forth from several places. Over Holborn Viaduct, in the vicinity of Holborn station, we dropped several bombs. From the Bank of England to the Tower was a short distance. I tried to hit the bridge, and believe I was successful.



A "Grimm" German
fairy tale!

FLIGHT

A "GRIMM" GERMAN FAIRY TALE.—What the "Zeppeliners" believe they did. "I tried to hit the Tower Bridge, and believe I was successful." (Commander Mathy's narrative to Herr Karl von Wiegand.) Ha! Ha!!

To what extent damage was done I could not determine. Flashes from the Tower showed guns placed there which I had already observed on a previous attack. They were keeping up a lively fire. Manoeuvring and arriving directly over Liverpool Street Station, I shouted 'Rapid fire' through the tube, and bombs rained down. There were a succession of detonations and bursts of fire, and I could see that we had hit well and apparently done great damage, which has been confirmed by reliable reports we have since received. Flames burst forth from several places in that vicinity.

"Having dropped all my bombs I turned my ship for home. My orders had been carried out, and carried out quickly. Despite the bombardment of the sky we had not been hit. Several times I leaned out and looked up and back at the dark outlines of my Zeppelin, but she had no hole in her grey sides. In point of damage done, and hitting objects which I had received instructions to attack, it was my most successful trip in London or the vicinity. Ascending or descending until we found a favourable wind current we made a quick return."

"How long were you over London?" I asked the lieutenant-commander, or captain-lieutenant, as is that title in German, and upon whose left breast was the Iron Cross of the First Class.

"The main attack was from 10.50 to 11, just ten minutes."

"Then the Zeppelin tactics of attack are to make a dash to points to be bombarded and quickly get away?"

"Yes; attacks must be short and quick."

The carefulness with which the plans of attack are studied beforehand developed during our talk. Mathy mentioned figures and seemed to know to a yard how far it was from St. Paul's to the Bank of England, thence the Tower and the different railway stations, and how long it took his Zeppelin, given the velocity of the wind and the revolutions of the propellers, to cover those distances. He often referred to new instruments and apparatus in use in Zeppelins for navigation, locating and measuring objects below, and controlling dropping bombs. This gave me the impression that there has been much research, experimenting and considerable progress along those lines in recent months. There are a number of interesting facts in connection with Zeppelins which, for obvious reasons, I cannot include in this story, among others the number of hours it now takes to make a dash to London and return. There is good reason for assuming that in the latest Zeppelins there are many improvements, that they are much faster, can carry more, and go higher than formerly. Count Zeppelin told me in February that those were three things he was working on.

Asked from what height he attacked London on the last raid, the Zeppelin commander replied, "Sorry, but I don't want you to give the English their range. They are doing well enough as it is, and learning fast."

⊗ ⊗ LIGHTER THAN AIR.

SHE (reading war news): "Here's news from Russia stating that Pychmsviensk fell yesterday."

HE (aviation enthusiast): "Really! Can't say I've ever heard of him. Wonder if he was flying a Sikorsky."

THE aviator's cocktail: Buy plain water.

R.I.P.

Here lies a fellow
Who had plenty of nerve.
But forgot what to do
When he banked for a curve.

A CERTAIN lady pilot in the States is reported to have said: "Aviation promoters seem to have a horror of bloomers; but I've had great success with mine."

AN aviator had given exhibitions in a small town near —, U.S.A. As the treasurer counted out the flyer's percentage of the gate-money, he sniffed at the by no means clean dollar-bills and coins, and said: "Hope you ain't skeered of microbes?" "Wall," said the flyer, "guess no microbes could live long on this share of mine."

Cheered him up!

AFTER much meditation the wealthy business man thought he would go a-flying. So he approached an aviator at a flying ground and fixed things up.

Up they went, but the machine seemed very unsteady. It wobbled and zigzagged terribly, and once or twice nearly side-slipped.

"Easy there!" gasped the passenger, roaring wildly above the noise of the engine. "Remember this is my first trip."

The aviator yelled back at him: "Well, it's only my third." — *Pearson's Weekly*.

"AIRMEN drop bombs in Baden and Argonne." Here to-day, Argonne to-morrow.—*Aerial Age*.

"Balfour said London was not a fortified city, and that its defences against aerial attack were poor," I ventured.

"We know there are several forts and batteries around the City and outside, and had he stood by my side a few nights ago and looked into those flashing guns, all over, he wouldn't say London was not a militarily defended city, and perhaps not think so poorly of its aerial defence."

When I asked how many bombs he carried and their size, Mathy remarked that, much as he would like to oblige me, that was a military question. "We carry two kinds of explosive bombs, and similar shells and fire bombs for destruction by fire. I cannot tell you their size, but they are of tremendous destructive force, as probably you could convince yourself if you could see around Liverpool Street Station. The number we carry depends largely on the distance we intend covering, and the quantity of benzine for the motors it is necessary to take." Mathy intimated that the new Zeppelins have a considerably greater radius of action than London and back. I asked the Zeppelin commander if he had ever been attacked by aeroplanes on any of his raids on England.

"I have never experienced a fight with an aeroplane; in fact, have never been bothered by them. Men are always at my guns watching for them, but so far none has attempted an attack. We are pretty well prepared for them." He remarked, significantly: "I am not afraid of them, and think I could make it interesting and take care of them unless, perhaps, there was a regular swarm. So far as aeroplane corps for the defence of London could be effective, it must be remembered that it takes some time for an aeroplane to screw itself up as high as we are, and by the time it gets there we are gone. Then, too, a great difficulty is for the aeroplane to land at night, while we can stay up all night and longer, if need be."

In my trips to and from Denmark I have observed Zeppelins out as far as Copenhagen scouting for enemy ships. My impression is that they have been of valuable service to the German Navy as scouts, and this is confirmed by some things Mathy said.

"What could a fleet of twenty-five or more Zeppelins do in an attack on London?" was my parting question to the commander.

"If you mean an attack without consideration for anything or anyone, that would be terrible, awful. Zeppelins then could stay much higher than now, when we have to pick out certain points. Such a fleet could probably cause more than a thousand fires, and would mean the destruction of the greater part of London; but I don't think there is any danger of that. We have no wish to destroy indiscriminately or to injure and kill women, children and other non-combatants."

⊗ ⊗ LIGHTER THAN AIR.

A FAMOUS American pilot was being interviewed. "Say I'm going to cross the Atlantic," he suggested. "We've already said that," said the ink-splasher. "Well, then, say I deny it. Anyway, for goodness' sake, print something about me."

WE gather from the London despatches that if the Germans aren't careful, they are likely to get the entire English people interested in the war with their Zeppelin raids.—*New York Evening Sun*.

The Misanthropic Condor.

Said the condor, in tones of despair:

"Not even the atmosphere's rare.

Since man took to flying,

It's really *too* trying,

The people one meet in the air."

Century Magazine.

Charivaria from *Punch*.

AN officer in Flanders writes: "You can always spend a pleasant hour watching the anti-aircrafts—for some unknown reason called 'Archibalds'—missing the 'planes not once but twenty times a minute." In America the air is clearer, and an Archibald brought down an Ambassador at the first attempt.

The Repentant Murderer.

EXTRACT from the letter of a girl to her friend: ". . . . We have had two Zeppelins over here this week, one last night which mother saw going to church, and one on Tuesday. . . ." —*Punch*.

Advice by the *Daily Mail*.

"If the airship is near or overhead, lie down and get on the lee side of a wall, which will break the blast, should a bomb explode near at hand, placing that wall between yourself and the window or windows."

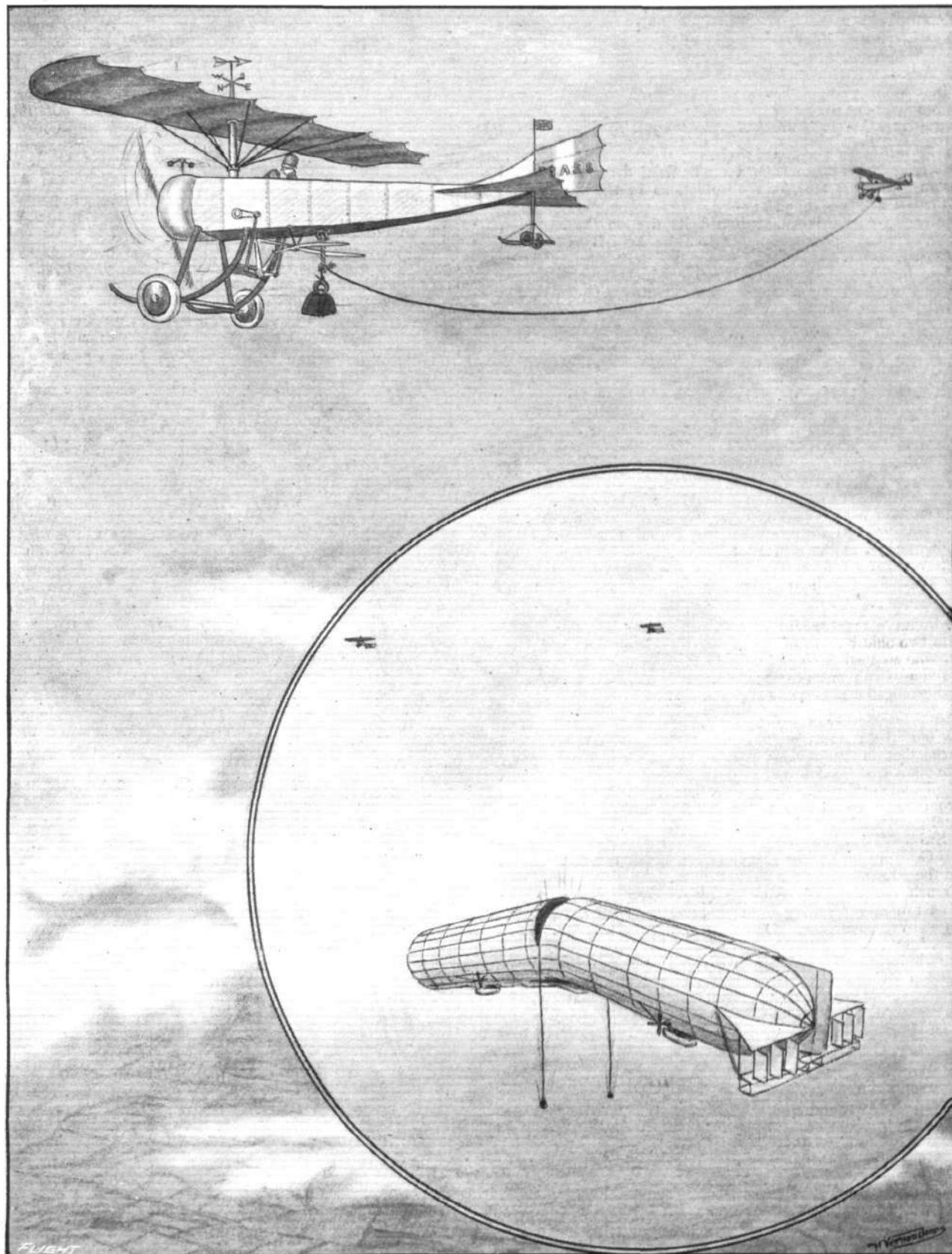
We fear the portable wall will present some difficulties.—*Punch*.

A Detail.

ENTHUSIASTIC AVIATOR (after long explanation of principle and workings of his biplane): "Now, you understand it, don't you?"
 YOUNG LADY: "All but one thing."
 AVIATOR: "And that is—."
 YOUNG LADY: "What makes it stay up?"—*New York Times.*

A Strict Censor.

RURAL CONSTABLE: "Sketching the harbour is forbidden, sir."
 ARTIST: "Oh, that's all right. I'm making a study of clouds."
 RURAL CONSTABLE (impressively): "Ah, but supposin' your picture got into the hands of the enemy's aircraft department; see the use they could make of it!"—*Punch.*



ZEP.-"STRAFING" DEVICES. By "FLIGHT'S" Tame Inventor.
 No. 3.—The Aerial Cheese-cutter.

